IRON TRADE REVIEW
Registered U. S. Patent Office
The Authority of Industry National and International
Vol. LXXV Cleveland, July 3, 1924 No. 1

Steel Improvement Is Slight

Better Tone and More Settled Conditions Fail To Bring Appreciable Increase In Volume—Many Mills Go Down This Week—June Loss in Pig Iron Production Heavy—Shipbuilding Shows Some Revival

IMPROVEMENT in the breadth and volume of new business in steel is of minor character but the situation has a more settled and less dubious tone. Opinion inclines to the belief that better things are in sight which accounts for the more cheerful feeling that is prevalent. Buyers do not seem so confident they can break prices below their present levels but they have only a limited amount of tonnage to bid for concessions. The stern way in which production and prices have been pinched down and the low state of stocks in buyers hands apparently put the situation in a good position to await favorable developments.

Production at the beginning of the week showed no appreciable variation over a week ago. The Steel corporation is operating on about a 53 per cent ingot basis. A wide suspension of steelworks and mills is scheduled for Thursday night to continue to July 7 in most cases or longer.

Buying of pig iron has simmered down somewhat this week, but further developments show that the recent sales were in excess even of the previous estimate of 600,000 tons. Four selling interests with headquarters at Cleveland alone disposed of 340,000 tons in June and Chicago makers about half as much. A Pittsburgh sanitary ware manufacturer this week increased its purchases to 39,000 tons. A Lynchburg, Va., foundry bought 8000 tons. Prices have slipped lower in various quarters. Southern iron is being offered at $18.50 Birmingham, with lower reported. Buffalo iron has been sold at $18.50.

June Adds Iron Loss

June pig iron production fell to the lowest point since the coal strike in August 1922, showing a further loss of 20.3 per cent in the average daily output from May. This brings the total loss of production since March to 39.8 per cent. The country in June was down to the point of making iron at the rate of only 24,600,000 tons annually. The daily average in June was 67,379 tons against 84,515 tons in May and the total output, 2,021,377 tons against 2,619,986 tons the preceding month. The loss of active furnaces in June was further increased by 27, making the total drop 109 since March. On June 31, 160 stacks were active.

Draws In Prices

A move in the direction of stiffening steel prices and of driving in sluggish tonnage is seen in the action of some large producers in fixing their dead level on plates, shapes and bars at 2.15c, Pittsburgh. Tonnage buyers of the preferred class who have had the benefit of lower figures than this, are being given a limited time to accept these quotations. In general the market on finished steel shows unimportant changes. The cotton tie market for the season has been opened without definite prices.

Another drop in IRON TRADE REVIEW composite of 14 leading iron and steel products brings the decline to its eighteenth consecutive week with pig iron still the drooping factor. The figure this week is $40.13, compared with $40.37 last week.

Building steel maintains its activity with new awards this week of 25,425 tons distributed over 49 different jobs. New inquiry represents 28 propositions calling for 20,565 tons. Bids go in July 16 on 25,000 tons for the approaches for the Delaware river bridge at Philadelphia. American fabricators are bidding on 57,000 tons of bridge work for the East Indian railways.

The reported award of 3000 freight cars for a Mexican railway to an eastern locomotive builder has aroused interest. The Missouri Pacific has deferred action on its inquiry for 3000 freight cars.

Ship Jobs Come Out

Demand for ship steel has reappeared in considerable volume due to the revival of a number of suspended projects and the issuance of inquiries for several new undertakings. In some cases it is understood the lower price of steel has been a factor in bringing out some of these propositions at this time. Four ore freighters are being bid by lake yards requiring 20,000 tons of steel. The Steel corporation will furnish 11,000 tons of material for two ocean-going vessels just placed. Cable advices state the Standard Oil Co. has placed two tankers with British yards.

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Machine Tool Makers Using Graphs

IF YOU are a builder or user of machine tools you particularly will be interested in the article in this issue of Iron Trade Review, "Determining the Price of Machine Tools." If you have thought of, or tried, applying the use of graphs to your own business, irrespective of whether it relates to machine tools, this article will appeal to

Foundry Embodies Advanced Practices. Page 29.

you. The machine tool trade is subject to extreme fluctuations. It is difficult for builders to plan far ahead for steady operations; in other words, to iron out the peaks and pits. The use of graphs is being highly developed as an aid to overcoming the difficulty. It is realized that corrective methods cannot be applied without the knowledge that well-made charts afford. This article, therefore, deals not only with the problem of the machine tool builders, but it illustrates admirably the use of graphs. Certain features of the study are of general interest.

Do You Know That—

Only 4.2 per cent of IRON TRADE REVIEW'S circulation is rated as unclassified industrially, this group including schools and libraries.

Pig Iron Activity Well Sustained—Sanitary Ware Makers' Purchase Totals 39,000 Tons—Prices Show More Steadiness

PITTSURGH, July 1.—The pig iron market is less active than last week, although a number of transactions have been closed and others are pending. The Iron City Sanitary Mfg. Co., Zelienople, Pa., on an inquiry for 5000 tons placed 1250 tons of No. 2 iron at $19, valley. The iron will be shipped from the Josephine furnace. The United States Radiator Co., wants 500 tons of No. 2X iron. The General Fire Extinguisher Co., Warren, O., is inquiring for a round tonnage. In addition to 22,000 tons reported last week, the Standard Sanitary Mfg. Co. bought 5000 tons of Ironton iron for its Louisville, Ky., plant, also about 12,000 tons of southern iron. The Pressed Steel Car Co. is in the market for 2000 tons of malleable or carwheel iron. It is quoted $19, valley. A few other foundry iron users want single cars to 1000 tons at a time. Some small lots of No. 2 still bring $19.50, valley. The basic market is unclarified. The Follansbee Bros. Co. is understood to have purchased 1500 tons from a nearby source at a price figuring back to below $19 valley. The West Penn Steel Co. purchased 3000 tons of basic at $19, valley. Another nearby sheetmaker affiliated with the General Electric Co. is taking 3000 tons of basic from a Pennsylvania steelmaker in a three-way deal, a pig iron, skelp and electric motor purchase, and while it is understood the selling price of the iron was $18 furnace this is not considered the market. The valley market is nominal at $19, although makers admit they must go lower if they want to share in the going business. Bessemer iron is selling in single carloads at $21, valley. One large order was lost by an interest quoting $20.50, valley, since $20 is available. One user quoted that figure on a round tonnage. The Wheeling Mold & Foundry Co. still defers action on 1000 tons each of bessemer and low phosphorus iron. It may purchase Wheeling district iron. The United Engineering & Foundry Co. still is negotiating for 1000 tons of low phosphorus iron, and sounding out the bessemer market. Low phosphorus is quoted at $27, valley, and $23, eastern Pennsylvania, at the furnace.

The average sales prices on basic and bessemer pig iron in the valley as compiled by W. P. Snyder & Co., for June were $19.733 and $21.143 respectively. These compare with $20.32 and $22.125 respectively for May.

Downward Trend Halted

Boston, July 1.—While pig iron buying which reached its height a week or 10 days ago is gradually subsiding, prices show a tendency to halt in the downward trend. Offers which would have been accepted a week ago now are refused by the furnaces. One of the principal eastern Pennsylvania furnaces has advanced the base grade about 50 cents. A Buffalo furnace which previously ignored silicon differentials is holding firm for 50-cent premiums for each 50 silicon points. Several sales of 300 to 500 tons were made during the past week. One inquiry before the trade totals 2000 to 3000 tons made up mostly of small lots. A sale of 300 tons of No. 2X (2.25 to 2.75 silicon) for a Massachusetts consumer was recently entered by a Pennsylvania maker at $20, furnace, or $23.65 delivered, and this about represents the market, although it is pointed out by one furnace interest that more than 1000 tons of No. 2X has been placed by Buffalo furnaces at $19 at the furnace or $23.92 delivered New England.

Buffalo Sales at $18.50

New York, July 1.—Sales of pig iron in this district during the past week aggregated at least 12,000 tons. One of the most important purchases was that of the A. P. Smith Mfg. Co., East Orange, N. J., which distributed 1500 tons of foundry iron for the fourth quarter, among three producers. Sales of Buffalo iron have been made at lower prices. The 1.75 to 2.25 silicon grade has been sold at $18.50, Buffalo. Thus, the Buffalo market now may be quoted at $18.50 to $19. Buffalo malleable may be had at $19, furnace. On eastern foundry iron the market is unchanged at $20 to $20.50 base, at the nearest furnace. Current inquiry involves about 2000 tons of malleable and 2000 to 3000 tons of foundry iron. More interest is shown in low phosphorus iron and inquiries now before the trade from Pittsburgh and middle western consumers aggregate several thousand tons.

Inquiries Are Larger

Buffalo, July 1.—A fair amount of inquiry for pig iron is current but consumers are buying only in small lots. The inquiries aggregate 20,000 to 25,000 tons, largely for foundry iron. The largest inquiry is one for 2000 tons, and there are several of 1000 tons. Individual inquiries are larger and more representative than for some time. Prices are well established within the range of $19 to $20 for foundry grades, $19 to $19.50 for malleable and $19 for basis. There is a tendency to waive differentials on foundry grades, if necessary to get desirable business. Sales last week are estimated at close to 15,000 tons. Rogers, Brown & Co., will bank another furnace July 10, keeping only one of four furnaces in operation. This will reduce district operation to seven furnaces, the lowest number in more than two years. Sellers believe prices will be steady throughout the next few weeks.

Month's Sales 340,000 Tons

Cleveland, July 1.—The extent of the recent buying movement in pig iron is best shown by the fact that four furnace interests represented in the northern Ohio group with headquarters here booked a total of 340,000 tons in June. Business is continuing in satisfactory volume and there remains to be placed considerable iron for use in the third quarter. The total of June sales includes orders for third and fourth quarter delivery. In the last week of the month some sellers reported exceptionally good bookings, the aggregate made by three of them being well over 60,000 tons. These mainly are for users in the Michigan, Ohio, and Indiana districts. The sale of a 3000-ton lot and another of 2000 tons in the Pittsburgh district are included by one maker in the week's transactions. Two sales of 2000 tons each were closed for delivery into the New England territory, while bookings for Ohio melters went over 5000 tons. Some orders involving over 10,000 tons each are among those noted in the general week's business. A good proportion involves malleable. There were no basic transactions reported during the week. While the majority of the furnace interests are carrying over tonnages originally booked for second quarter delivery, specifications are coming through more satisfactorily. The automobile interests have not yet started to place new business in volume, but are

taking more iron on specifications. Inquiries before the trade here total around 20,000 tons. One Cleveland maker quotes $20, furnace, for delivery in the 50-cent switching area, while another asks $20.50. The valley price is $19, and furnaces represented here have been meeting this figure in competition in nearby territory.

Furnace B of Pickands, Mather & Co., at Toledo, is being blown out for rebuilding. The other stack at the Toledo plant remains in operation.

Prices Are Lower

Cincinnati, July 1.—Sales of northern foundry iron are reported to have been made at $19 to $19.75, Ironton, recently. Northern iron is generally quoted at $19, Ironton, while southern iron ranges from $19 to $20, Birmingham. The Standard Sanitary Mfg. Co. is understood to have closed for 5000 tons of northern foundry iron for its Louisville plant. The business was placed with two southern Ohio furnace interests, one receiving 3000 tons and the other 2000 tons. The Dayton Malleable Co., Dayton, O., bought 400 tons of malleable from a Toledo furnace interest, while the Monitor Furnace Co., Cincinnati, bought 250 tons of Wellston iron. A sale of 300 tons of northern foundry iron to the Connersville Blower Co., Connersville, Ind., also is noted. The United States Malleable Co., Toledo, O., is in the market for 1500 tons of malleable for third quarter. The Louisville & Nashville railroad still negotiates for 510 tons of southern for Louisville. The furnace of the Belfont Steel & Wire Co., Ironton, O., was blown out today for relining.

Heavy Selling Continues

Chicago, July 1.—Most northern foundry and malleable iron sales are being booked at $20, furnace, but it is understood that some iron has been sold at $19.50 under conditions agreeable to the furnace, giving the northern market a spread of $19.50 to $20. The $19.50 price has not become general and furnaces are attempting to make $20 the bottom of the decline. Inquiry coming out of Milwaukee at this time includes 1000, 300 and 200 tons of foundry iron and 200 tons of bessemer. Two inquiries for 1000 tons each of foundry iron are current from Chicago melters. Southern iron is offered at $18, Birmingham, or $24.01, delivered Chicago, but sales are light. Charcoal still is held at $26, furnace, or $29.04, delivered Chicago.

St. Louis Sales Small

St. Louis, July 1.—Sales of pig iron during the past few days total approximately 3500 tons, mainly in small lots for prompt shipment. The largest sale reported was 600 tons of foundry iron by the St. Louis Coke & Iron Co. to a radiator maker. Price trend continues lower, one southern producer offering a quotation which figures back slightly over $17, Birmingham. Northern iron is offered at $20, Chicago, and relatively low quotations have been made by producers in other sections. Lake Superior charcoal iron has been shaded under the recent $26 quotation on a small tonnage for July delivery.

Southern Down to $18.50

Birmingham, Ala., July 1.—Some buying impetus is reported with pig iron down to $18.50, Birmingham, for No. 2 foundry. One smaller company is sorting over the business offered while others are taking it on, the hope now expressed that they may not have to shut down their furnaces. The aggregate business is less than production. On the other hand it is stated underlying conditions are showing some improvement. What little iron is selling is in lots up to 300 tons. Some melters express their confidence but have placed no orders.

Buys 8000-Ton Lot

Philadelphia, July 1.—A purchase of 8000 tons of foundry iron, some from Virginia furnaces and the remainder from Alabma makers by the Lynchburg Foundry Co., Lynchburg, Va., has been the principal transaction of the week. Virginia iron now is quoted at $24, furnace, plus 50-cent silicon differentials. The Pennsylvania railroad is inquiring for 2000 to 4000 tons of foundry iron for third quarter for Altoona. Eastern Pennsylvania foundry iron is held at $20 to $21.50, base.

The Bethlehem Steel Co. has banked one of its blast furnaces at Coatesville and all three furnaces there now are idle.

Prices Present and Past

Representative market figures yesterday, and for last month, three months ago and one year ago

	July 2, 1924	June, 1924	Apr., 1924	July, 1923
PIG IRON				
Bessemer, valley del., Pitts.	$21.76	23.26	24.61	28.51
Basic, valley	19.00	20.00	21.70	25.15
Basic, eastern del., eastern Pa.	20.50	20.60	21.35	27.25
*No. 2 foundry, del. Pitts.	20.76	21.26	23.51	27.36
No. 2 foundry, Chicago	19.50	21.38	24.40	28.00
*Southern No. 2, Birmingham	18.50	20.00	22.20	25.00
*Southern Ohio, No. 2, Ironton	19.50	20.25	23.00	26.50
**No. 2X, Virginia furnace	24.50	25.50	25.50	27.25
**No. 2X, eastern, del. Phila.	21.76	21.76	23.73	28.00
Malleable, valley	19.00	19.75	22.20	25.50
Malleable, Chicago	19.50	21.38	24.40	28.00
Lake Superior charcoal, Chicago	29.04	29.04	29.04	36.60
Gray forge, val., del. Pittsburgh	20.26	20.76	23.51	27.01
Ferromanganese, del., Pitts.	112.29	112.29	112.29	122.79
SEMIFINISHED MATERIAL				
Sheet bars, bessemer, Pittsburgh	40.00	40.00	42.10	42.50
Sheet bars, open-hearth, Pitts.	40.00	40.00	42.10	42.50
Billets, bessemer, Pittsburgh	38.00	38.00	40.00	42.50
Billets, open-hearth, Pittsburgh	38.00	38.00	40.00	42.50
FINISHED MATERIAL				
Steel bars, Pittsburgh	2.15	2.20	2.30	2.40
Steel bars, Chicago	2.25	2.25	2.41	2.50
Steel bars, Philadelphia	2.47	2.52	2.57	2.72
FINISHED MATERIAL (Continued)				
Iron bars, Philadelphia	$2.42	2.42	2.47	2.72
Iron bars, Chicago mills	2.20	2.24	2.36	2.55
Beams, Pittsburgh	2.15	2.20	2.35	2.50
Beams, Philadelphia	2.42	2.42	2.57	2.82
Beams, Chicago	2.25	2.38	2.51	2.60
Tank plates, Pittsburgh	2.15	2.15	2.35	2.50
Tank plates, Philadelphia	2.22	2.27	2.52	2.82
Tank plates, Chicago	2.25	2.38	2.51	2.60
Sheets, blk., No. 28, Pittsburgh	3.65	3.65	3.70	3.85
Sheets, blue anl., No. 10, Pitts.	2.80	2.80	2.80	3.00
Sheets, galv., No. 28, Pittsburgh	4.80	4.80	4.85	5.00
Wire nails, Pittsburgh	2.90	2.90	3.00	3.00
COKE				
Connellsville furnace, ovens	3.00	3.15	3.55	4.35
Connellsville foundry, ovens	4.25	4.15	4.60	5.15
OLD MATERIAL				
Heavy melting steel, Pittsburgh	16.50	16.25	16.60	18.25
Heavy melting steel, eastern Pa.	15.50	15.65	15.35	17.25
Heavy melting steel, Chicago	14.00	13.55	14.65	17.10
No. 1 wrought, eastern Pa.	17.75	17.75	18.40	18.85
No. 1 wrought, Chicago	14.00	13.25	14.80	16.60
Rails for rolling, Chicago	14.25	14.55	17.10	18.40

*1.75 to 2.25 silicon. **2.25 to 2.75 silicon.

Composite Market Average

Representing the Combined Average Prices Per Ton of Fourteen Leading Iron and Steel Products Yesterday, One Week, One Month, Three Months, One Year and Ten Years Ago.

July 2, 1924	June 25, 1924	June, 1924	Apr., 1924	July, 1923	July, 1914
$40.13	$40.37	$40.61	$42.33	$45.39	$22.17

Products Included Are Pig Iron, Billets, Slabs, Sheet Bars, Wire Rods, Steel Bars, Plates, Structural Shapes, Black, Galvanized and Blue Annealed Sheets, Tin Plate, Wire Nails and Black Pipe

Iron and Steel Prices

SCRAP PRICES, PAGE 64; WAREHOUSE, PAGE 60; ORE, NUTS, BOLTS AND RIVETS AND PIPE PRICES, PAGE 66

Pig Iron

Prices per gross ton

Bessemer, valley	$20.00 to 21.00
Bessemer, Pittsburgh	21.76 to 22.76
Basic, valley	19.00
Basic, Pittsburgh	20.76
Basic, Buffalo	19.00
Basic, del., eastern Pa.	20.50 to 20.75
Malleable, valley	19.00
Malleable, Pittsburgh	20.76
Malleable, Cleveland, del.	20.50 to 21.00
Malleable, Chicago	19.50 to 20.00
Malleable, Buffalo	19.00 to 20.00
Malleable, del., eastern Pa.	22.00 to 23.00

FOUNDRY IRON SILICONS

No. 2 Northern	1.75 to 2.25
No. 2 Southern foundry	1.75 to 2.25
No. 2X East'n and Virginia	2.25 to 2.75
No. 1X Eastern	2.75 to 3.25
No. 1 Chicago	2.25 to 2.75
No. 2 foundry Eastern	1.75 to 2.25

No. 1X, eastern del., Phila.	21.76 to 22.76
No. 1X, Buffalo	19.50 to 20.00
No. 1 foundry, Chicago	20.00 to 20.50
No. 2 foundry, valley	19.00
No. 2 foundry, Pittsburgh	20.76
No. 2 foundry, Buffalo	18.50 to 19.00
No. 2 foundry, Chicago	19.50 to 20.00
No. 2 foundry, Granite City	22.50 to 23.00
No. 2 foundry, Ironton fur.	19.50
No. 2 foundry, Cleveland, del.	20.50 to 21.00
No. 2 foundry, del., Phila.	20.76 to 21.76
No. 2 foundry, N. J. tidewater	21.39 to 22.39
No. 2X, eastern del., Phila.	21.26 to 22.26
No. 2X, east. N. J. tidewater	21.89 to 22.89
No. 2X, eastern del., Boston	23.65 to 24.15
No. 2X, foundry, Buffalo fur.	19.00 to 20.00
No. 2X, Buffalo, del. Boston	23.91 to 24.41
No. 2 southern, Birmingham	18.00 to 19.00
No. 2 southern, Cincinnati	22.05 to 23.05
No. 2 southern, Philadelphia	25.80 to 26.80
No. 2 southern, Chicago	24.01 to 25.01
No. 2 southern Cleveland	24.01 to 25.01
No. 2 southern, Boston (rail and water)	24.91 to 25.91
No. 2 southern, St. Louis	23.17 to 24.17
No. 2X, Virginia furnace	24.50
No. 2X, Virginia, Phila.	29.17
No. 2X, Virginia, Jersey City	30.04
No. 2X, Virginia, Boston	30.41
Gray forge, eastern Pa.	20.50 to 21.50
Gray forge, val. del., Pitts.	20.26
Low phos., standard, valley	27.00 to 28.00
Low phos., standard, Phila.	nominal
Low phos., Lebanon, furnace	24.00 to 24.50
†Low phos., English, Phila.	27.26 to 27.76
Charcoal, Birmingham	31.00
Charcoal, Superior Chicago	29.04

Silvery Iron
Jackson County, Ohio, furnace

7 to 8 per cent	29.00
8 to 9 per cent	30.50
9 to 10 per cent	32.50
10 to 11 per cent	34.50
11 to 12 per cent	37.00
12 per cent	39.50

Bessemer Ferrosilicon
Jackson County, Ohio, furnace

10 to 11 per cent	39.50
11 to 12 per cent	42.00
12 to 13 per cent	44.50

Ferroalloys

†Ferromanganese 78 to 82 per cent, tidewater, or furnace first hand and resale	107.00 to 107.50
Ferromanganese delivered Pittsburgh	111.79 to 112.29
Spiegeleisen 19 to 21 per cent domestic furnace or tidewater	34.00 to 36.00
†Spiegeleisen, English, delivered tidewater	33.00 to 34.00
Ferrosilicon, 50 per cent contract freight allowed	75.00
Ferrotungsten standard, cents per pound contained	88.00 to 93.00
Ferrochrome, 60 to 70 chromium, 6 to 8 carbon, cents per pound contained, delivered	10.00 to 10.25
Ferrovanadium, 30 to 40 per cent per pound estimated, according to analysis	$3.50 to $3.75
Ferro carbon-titanium, carloads, producer's plant, per net ton	$200.00

†Duty paid.

Coke

Beehive, Ovens

Prices per net ton

Connellsville furnace	$3.00 to 3.25
Connellsville foundry	4.25 to 5.00
New river foundry	8.50 to 9.00
Wise county furnace	3.75 to 4.50
Wise county foundry	4.00 to 5.00
Alabama furnace	5.00 to 5.50
Alabama foundry	5.50 to 6.00

By-Product

Foundry, Newark, N. J., del.	$10.41
Foundry, Chicago, ovens	12.50
Foundry, Boston, delivered	12.00
Foundry, St. Louis	12.00
Foundry, Granite City, Ill.	9.00 to 9.50
Foundry, Alabama	5.00 to 5.50

Semifinished Material

Prices per gross ton

BILLETS AND BLOOMS

4 x 4-inch base

Open-hearth, Pittsburgh	$38.00
Open-hearth, Youngstown	38.00
Open-hearth, Philadelphia	43.17
Open-hearth, Chicago	35.00
Bessemer, Pittsburgh	38.00
Bessemer, Youngstown	38.00
Forging, Pittsburgh	43.00
Forging, Philadelphia	45.17 to 48.17

SHEET BARS

Open-hearth, Pittsburgh	$40.00
Open-hearth, Youngstown	40.00
Bessemer, Pittsburgh	40.00
Bessemer, Youngstown	40.00

SLABS

Pittsburgh	38.00
Youngstown	38.00

WIRE RODS

¼-inch and finer

Wire rods, Pittsburgh	$48.00

Standard extras, $2.50 per ton over @-inch; $5 for screw stock; $15 for acid wire rods. Carbon extras, $3 for 0.20 to 0.40; $5 for 0.41 to 0.55; $7.50 for 0.56 to 0.75; $10 over 0.75.

SKELP

Grooved skedp, Pittsburgh	2.15c to 2.20c
Universal skedp, Pittsburgh	2.15c to 2.20c
Sheared skelp, Pittsburgh	2.15c to 2.20c

Shapes, Plates and Bars

Prices per pound

Structural shapes, Pittsburgh	2.15c to 2.20c
Structural shapes, Phila.	2.27c to 2.52c
Structural shapes, New York	2.29c to 2.54c
Structural shapes, Chicago	2.25c to 2.35c
Structural shapes, Birmingham	2.30c to 2.35c
Tank plates, Pittsburgh	2.15c to 2.20c
Tank plates, Philadelphia	2.17c to 2.32c
Tank plates, New York	2.19c to 2.34c
Tan plates, Chicago	2.25c to 2.35c
Tank plates, Birmingham	2.30c to 2.35c
Bars, soft steel, Pittsburgh	2.15c to 2.20c
Bars for cold finishing, Pitts.	2.30c to 2.35c
Bars, soft steel, Philadelphia	2.47c to 2.52c
Bars, soft steel, New York	2.49c to 2.54c
Bars, soft steel, Chicago	2.25c
Bars, soft steel, Birmingham	2.30c to 2.35c
Bars, refined iron, Pittsburgh	3.00c to 4.75c
Bars, rail steel, Chicago	2.10c to 2.13c
Bars, rail steel, mill	2.10c to 2.20c
Reinforcing bars, billet, Pitts.	2.15c to 2.20c
Bar iron, common, Phila.	2.42c
Bar iron, common, New York	2.49c to 2.59c
Bar iron, common, Chicago	2.20c
Bars, forging quality, Pitts.	2.40c to 2.45c

Hoops, Bands, Strip

Prices per pound

Hoops, Ptitsburgh, under 5 in	2.60c to 2.75c
Hoops, Pittsburgh, 20 gage, under 1 in.	2.90c to 3.00c
Bands, Pittsburgh	2.60c to 2.75c
Hot rolled strip steel, Pittsburgh stamping quality	2.50c to 2.75c
Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100-inch and heavier, base, Pittsburgh	4.50c

Cold Finished Steel

Prices per pound

Cold finished steel bars, Pittsburgh base, carloads	2.90c
Cold-finished steel bars, base Pittsburgh, less carloads	3.00c to 3.25c
Steel shafting, Pittsburgh	2.90c

Rails, Track Material

Standard bessemer rails, mill	$43.00
Standard open-hearth rails, mill	43.00
Relaying rails, St. Louis	27.00 to 32.50
Relaying rails, Pittsburgh	25.00 to 28.00
Light rails, 25 to 45, mill	1.90c to 2.00c
Angle bars, Chicago base	2.75c
Spikes, railroad, Pitts.	2.80c to 2.90c
Spikes, small railroad, 7/16-in. and smaller	3.25c to 3.40c
Spikes, boat and barge, Pitts.	3.25c to 3.46c
Spikes, railroad, Chicago	3.10c
Track bolts, Pitts. standard	3.75c to 4.00c
Track bolts, Pitts., small	4.50c to 4.75c
Track bolts, Chicago	4.10c
Tie plates, Pittsburgh	2.50c to 2.55c
Ties plates, Chicago	2.60c

Spike, tie plate and truck bolt prices for carlots.

Wire Products

To Jobbers in Carloads

Prices per pound

Wire nails, Pittsburgh	2.90c
Galv'd nails, 1-inch and over	5.15c
Plain wire, Pittsburgh	2.65c
Annealed wire, Pittsburgh	2.80c
Galvanized wire, No. 9 gage, Pittsburgh	3.25c
Barbed wire, painted, Pitts.	3.35c
Barbed wire galv., Pitts.	3.70c
Polished staples, Pittsburgh	3.35c
Galvanized staples, Pittsburgh	3.70c
Coated nails, count keg Pittsburgh	2.30c
Woven wire fencing (retailers)	65 off
Woven wire fencing (jobbers)	67½ off

Sheets

SHEET MILL BLACK

Prices per pound

No. 28, open-hearth, Pitts.	3.60c to 3.65c
No. 28, bessemer, Pitts.	3.60c to 3.65c
No. 28, open-hearth, Phila.	3.82c to 3.97c
No. 28, open-hearth, Chicago	4.09c to 4.19c

TIN MILL, BLACK

No. 28, open-hearth, Pitts.	3.75c

GALVANIZED

No. 28, open-hearth, Pitts.	4.70c to 4.80c
No. 28, bessemer, Pittsburgh	4.70c to 4.80c
No. 28, open-hearth, Phila.	5.02c to 5.12c
No. 28, open-hearth, Chicago	5.19c to 5.34c

BLUE ANNEALED

No. 10, open hearth, Pitts.	2.75c to 2.80c
No. 10, bessemer, Pittsburgh	2.75c to 2.80c
No. 10, open-hearth, Phila.	3.02c to 3.12c
No. 10, open-hearth, Chicago	3.34c

AUTOMOBILE SHEETS

No. 22, Pittsburgh	5.10c

Tin Plate

Prices per 100-pound box

Tin plate, coke base, Pitts.	$5.50

Iron and Steel Pipe

Base Discounts Pittsburgh to Jobbers in Carloads

	Black	Galv.
1 to 3-inch, butt steel	62	50½
1 to 1½-inch, butt iron	30	13

Boiler Tubes

Less Carload Discounts—Carloads 4 Points Additional

Steel 3¼ to 3¾-inch	38½
Charcoal iron, 3¼ to 4½-inch	5
Seamless hot rolled, 3½ to 3¾-inch	35

Chain, Piling, Cut Nails

Prices per pound

Chain, 1-in. proof coil, Pitts	6.00c to 6.25c
Sheet piling base, Pittsburgh	2.20c to 2.25c

Cotton ties, bundle 45 lbs. Pittsburgh, delivered prices on application.

Cut nails, Pittsburgh	3.00c

Cast Iron Water Pipe

Prices per net ton

Class B Pipe

Four-inch, Chicago	$58.20
Six-inch and over, Chicago	52.20 to 54.20
Four-inch, Birmingham	51.00 to 52.00
Six-inch and over Birmingham	47.00 to 48.00
Four-inch, New York	64.60 to 65.60
Six-inch and over, New York	59.60 to 60.60

Standard fittings, Birmingham, base, $110.00

6 to 24-inch, base; over 24-inch, plus $20; 4-inch, plus $20; 3-inch, plus $20; gas pipe fittings, $5 higher.

Class A pipe is $5 higher than Class B.

Scrap Gaining Strength

Better Sentiment and Higher Quotations Rule in Most Markets—Renewed Buying Seems Sure To Cause Instant Increase in Price

SCRAP PRICES, PAGE 64

Chicago, July 1.—Most iron and steel scrap grades have advanced 50 cents to $1 a ton, but almost wholly upon trading among dealers and buying some small lots by melters. One steelmaker has placed some heavy melting steel at $14.50, delivered. The strength of melting steel is evidenced by the fact the Burlington railroad recently obtained $15, delivered Chicago, for steel scrap, and the Santa Fe railroad $14.90 delivered. One broker has made two sales of melting steel to Ohio consumers. A user of malleable scrap has done some buying at $16.50. Some steel foundries have been inquiring for coil springs, tires, knuckles and couplers. Sentiment in scrap is undoubtedly better but recovery from the recent slump will not be complete until melters really begin to buy, and there are no indications of this. The situation continues where most yard interests are bullish and brokers neutral.

Heavy Tonnage Is Offered

Boston, July 1.—Several heavy sales of iron and steel scrap have served to enliven the market. The Boston Elevated railroad has disposed of 1000 tons, mostly girder rails. The General Electric Co. at its Lynn, Mass., works sold 35 cars of miscellaneous scrap at higher prices. The auction sale of the American & British Mfg. Co. at Bridgeport, Conn., included an item of approximately 1000 tons of scrap. Consuming demand for most grades is slower after the buying movement of a week ago. Heavy melting steel is still moving slowly into Pennsylvania at about $10.50 shipping point. Some dealers have been paying $8 for machine shop turnings for shipment into Pennsylvania against orders taken at $13 to $13.50 delivered. Cast grades are sluggish with a slight drop in No. 1 machinery and textile scrap. Nearly 200 tons of strictly textile exchanged hands recently at $20 delivered.

Firmer at New York

New York, July 1.—Pronounced firmness characterizes the iron and steel scrap market. Consuming demand is dull, but dealers generally are still quietly buying tonnage for storage. They are not buying in the same volume but are continuing to close on enough to make downward reaction improbable for some time. At the moment there appears little doubt if a mill were to come into the market for a round tonnage it would have to pay anything from 50 cents to $1 a ton higher.

The only revision of the past few days is an advance of 50 cents a ton on wrought pipe, this material now holding at $10.75 to $11.25, and appears to be based in no small measure on buying for Milton, Pa., at $15, delivered. Skeleton steel continues in fair demand at $12.50, delivered, Harrisburg, Pa., and Phoenixville, Pa., with turnings going to these points at $12, delivered. Melting steel is going to Bethlehem, Pa., at $14, delivered, and to Pottsville, Pa., at $16.

Pittsburgh Paying Higher

Pittsburgh, July 1.—Large tonnage transactions in the Canton—Massillon, O., territory, in each of which cities purchases of about 20,000 tons of heavy melting steel at $18 were recorded, find no duplicate in this vicinity. The Monessen, Pa., user has been taking small tonnages of high grade No. 1 railroad heavy melting steel scrap and paying $17. Dealers are paying $16.50 for heavy melting steel for their yards and the market is quotable at $16.50 to $17 instead of flat $16.50. It is expected only high bids will be successful on the Pennsylvania railroad's combined list closing today, involving 39,875 tons of assorted grades, since dealers are paying $17.50, Canton or Massillon. The Pennsylvania railroad also is offering 25 locomotives with tenders. It is confidently predicted that the next large tonnage purchased by a consumer in this territory will carry considerably in advance of $17, probably around $18.

Better Tone at Buffalo

Buffalo, July 1.—A fairly strong undertone is shown in heavy melting steel and other iron and steel scrap grades, although buying is on a small scale as is customary over the holiday. An unusually wide range in prices is noted, especially on heavy melting steel. One consumer insists he can buy at or below $14 while sellers are known to have obtained as high as $15.50 for tonnage sold within the past 10 days. The higher price may have been on a compromise basis. It is doubtful whether real tonnage could be purchased below $14 to $15 which is this week's average quotation. In one instance a Buffalo melter sought to impose a cut of $1 a ton on material on the ground that it was not of specified quality. When the seller ordered the car returned to his yards it was accepted at full price.

Steadier at Cincinnati

Cincinnati, July 1.—Quotations on iron and steel scrap manifest more steadiness for while demand still is restricted supplies are coming out less freely. Activity in the valley district, has resulted in most dealers here marking up prices about 50 cents, to keep them in line with quotations in other centers. Heavy melting steel, iron and steel axles, car wheels and low phosphorus steel are quoted higher. The only activity is among dealers who are taking in material for old orders. In view of uncertainties dealers are not accumulating much tonnage in their yards. Railroad lists continue to come out. The Pennsylvania has a list involving 40,000 tons, while the Big Four has 5000 tons of miscellaneous scrap for disposal

Improvement at St. Louis

St. Louis, June 30.—Further improvement has taken place in the undertone of iron and steel scrap. The industries are buying more, to balance recent purchases of pig iron and others to protect orders booked since the middle of June. Other consumers are quietly picking up tonnages on the theory that bottom

(*Concluded on Page* 14)

Semifinished Market Slow

Specifications on Running Contracts Tonnages Showing Some Improvement—Small Lots of Billets Bringing $38 at Cleveland

SEMIFINISHED STEEL PRICES, PAGE 5

Pittsburgh, July 1.—Inactivity is the chief characteristic of the semifinished market, although it is assumed that in a quiet way some conversion mills are closing up with their regular sources of supply, and this business never reaches the open market for discussion in the trade. Rerolling billets, 4 x 4-inch, as well as the smaller sizes, are quoted at $38, Pittsburgh or Youngstown, on bessemer or open-hearth material, and no inquiries are out. While buyers think they should be able to obtain a like figure on sheet bars, makers are inclined to hold these at $40. Forging billets are quoted at $43 or at the usual differential of $5 over rerolling billets. Specifications on the contracts which have been renewed are coming through in good shape and one or two more forging billet users are to be heard from.

Wire rod buyers so far as can be ascertained here have not been able to do lower than $48, Pittsburgh, and some have closed at that figure; others are negotiating. Some auto wheel skelp business is understood to have been closed up by a large independent steel company with a regular connection near Pittsburgh. Skelp is quoted on practically the same basis as plates, 2.15c to 2.20c, Pittsburgh.

Sell Forging Billets at $40

New York, July 1.—Forging billets have been sold in this district at $40, Pittsburgh. The present market on forging billets appears to be $40 to $43. The market on rerolling billets is untested, and the nominal figure is $38, Pittsburgh. Wire rods usually are bringing $48 base Pittsburgh.

Billets Sold at $38

Cleveland, July 1.—Specifications of sheet bars, billets and slabs on running contract tonnages are much better, though makers still have large tonnages to work out before considering third quarter business. Some inquiries for moderate size tonnages have begun to appear. The first sale of billets made in weeks by one interest for delivery in nearby territory was closed in the week at $38, Cleveland. Nothing has appeared to test the market

for sheet bars, which are held nominally at $40.

Small Lots Moving

Philadelphia, July 1.—Billet sales are restricted to small, spot lots and prices are unchanged.

Demand Is Lacking

Youngstown, O., July 1.—No effort is being made to line up sheet bar requirements for third quarter by consumers in this district. Slack market conditions in the sheet industry during the past two months have left considerable sheet bar tonnage on producers' books and with the usual midsummer dull period at hand little interest is being taken in contracting for semifinished material. An absence of demand for all grades of semifinished prevails. While some talk is heard that lower than $40, Youngstown, could be done on sheet bars this general market figure remains untested.

Wire Is Weak

Prices Generally are Held but Some Shading Appears

WIRE PRICES, PAGE 5

Pittsburgh, July 1.—Conditions are much the same from week to week in the wire products market although leading makers are firmer in their stand not to quote less than 2.65c to 2.90c, base Pittsburgh, on wire and wire nails. Reports of concessions are meagerly supported. Mixed carloads appear to be made up of a greater variety of wire products than is usual at this season.

June Orders Over May

New York, July 1.—Daily average bookings of wire and nail business in June were 2 to 3 per cent in excess of the May daily average. Indications point to a further increase in July. There is room for much improvement owing to the present low rate of shipments, which average under 50 per cent. Prices continue 2.65c, base Pittsburgh, on plain wire and 2.90c, base Pittsburgh, on wire nails, but some shading continues.

Buy for Fence Making

Buffalo, July 1.—Fence makers have bought good sized tonnages of wire for third quarter requirements. These purchases are the feature of the present wire market, which lacks other activity. Automobile manufacturers show little interest in third quarter requirements. These purchases are the feature of the present wire market, which lacks other activity. Automobile manufacturers show little interest in third quarter tonnage. Sale of wire cloth was exceptionally light during June.

Prices Becoming Weak

Chicago, July 1.—Although there is no evidence of a general breakdown in the quotations of 2.65c, Pittsburgh, on plain wire and 2.90c, Pittsburgh, on wire nails, they are weak. Business continues to flow in at a rate that makes possible operations of about 40 per cent. The recent rise in grain prices prompts hopes of heavier demand in agricultural communities in the fall.

Coke Concessions Offered

Some Makers Quoting $3 on Extended Deliveries, To Keep Ovens Operating—Foundry Contracts Renewed—Market Is Quiet

COKE PRICES, PAGE 5

Pittsburgh, July 1.—Beehive coke oven operators with capacity active are anxious for business, believing it is cheaper to sell at a loss and maintain their organizations than to shut down completely. This explains quotations of $3 on extended deliveries, now available in several directions, though some makers refuse to quote below $3.25. Recently the Robesonia Iron Co. closed for the third quarter. The Sharon Steel Hoop Co. has closed for the last half. It is understood the latter paid $3 for the third quarter and $3.25 for the fourth. The Adrian furnace bought 250 carloads for July shipment at $3.20. It is understood the Jackson Iron & Steel Co. purchased by-product coke for July at a higher figure. The Reliance Coke & Furnace Co. traded coal for by-product coke, its own beehive ovens being idle. The Eastern Steel Co. is negotiating for beehive coke for July, and has been quoted $3, Connellsville, on Swedeland coke. A Connellsville operator is meeting that figure. The Emporium Iron Co. and an eastern maker of low phosphorus iron are negotiating for July or third quarter requirements. Few inquiries are current for medium sulphur or heating coke. Quotations on small lots are $3.25, and on 200 or 300 tons at a time $3 or more. The Norfolk Smelting & Refining Co. wants several thousand tons. Producers are quoting middle interests a minimum of $2.75. The foundry coke supply is more restricted and it is difficult to locate any below $4.25. One operator selling at that figure last week has increased the price to $4.50. Other standard foundry fuel is $4.75. Practically all the business is with contract customers. Two large interests have renewed contracts for the third quarter or last half at $5. Premium brands in box cars are $5.75 and $6. Some orders involve carloads monthly for the last half. Others are closing for July only on the same basis.

Production of coke for the week ended June 21 was 74,300 tons, as compared with 75,530 tons for the preceding week, according to the *Connellsville Courier*.

Market Continues Easy

New York, July 1.—While the closing of some capacity has brought about less competition for the current business, the tone of the market in beehive foundry coke continues easy. Good brands of foundry coke for spot shipment may be had at $4.50, Connellsville. The volume of business is small. On standard by-product foundry coke the market continues $10.41, delivered at Newark and other northern New Jersey consuming points.

Cincinnati Sales Small

Cincinnati, July 1.—Coke buying is limited principally for nearby shipment. Foundries are supplied for the next few weeks. Sales the past week involved 1800 tons of foundry coke to a user in this district for third quarter, and 25 cars of furnace coke to a gas company in the central part of the state. The Jackson Iron & Steel Co., Jackson, O., is reported to have covered for its July requirements. Eaton, Rhodes & Co., have announced the price of domestic coke for July shipment will continue at $5, ovens, for walnut and egg and $4 for No. 2 nut. The Ashland By-Product Coke Co.'s price is the same for egg and walnut, but $4.50, ovens, for No. 2 nut. Prices of New River and Wise county coke are unchanged, while new schedules have been established on Pocahontas coke as follows: Foundry $5.50, and furnace $4.50, ovens. A leading local by-product producer reports a slight gain in demand from melters, but there is a disposition to purchase only enough for current consumption.

Price Reduced at Chicago

Chicago, July 1.—Foundry coke has been reduced 75 cents a ton in Chicago, and now is $10.75, delivered, Chicago.

St. Louis Market Slow

St. Louis, July 1.—Purchasing of coke by all classes of consumers continues on a hand-to-mouth basis, and prices are steady. There is a good movement to industrial users, many of whom are beginning to increase their stocks. The past two weeks have witnessed a slightly better demand from the tri-state lead and zinc district, but the demand from iron and steel interests continues slow.

Southern Prices Lower

Birmingham, Ala., June 30.—Lower prices for coke have not developed much business. Encouragement is taken from reports that some of the foundries and machine shops are looking forward to improved conditions of trade. Quotations for coke range from $5 to $5.50 for furnace and foundry grades. No contracts are being taken. Announcement is made that the Sloss-Sheffield Steel & Iron Co. will sell coal and coke direct to consumers in any quantity, bins having been erected in the city.

Central Steel Co. To Start New Blast Furnace

The Central Steel Co., through its auxiliary, the Central Furnace Co., will begin work at once on the new blast furnace and by-product coke plant on Columbia Heights, Massillon, O., according to announcement made by C. E. Stuart, secretary-treasurer of the company. Officers and directors have voted to proceed immediately with the development. Engineers of the company estimate the extension with other plans involved will cost approximately $10,000,000. The acreage acquired for the project is 200.

Officials have been proceeding with preliminaries and the Wheeling & Lake Erie railroad has constructed a bridge and 15 miles of storage tracks to accommodate the enlarged operations.

Bar Demand Still Weak

Situation Little Changed as Holiday Inactivity Marks Real Situation—Somewhat Better Specifications Given Mills

BAR PRICES, PAGE 5

Chicago, July 1.—Improvement in the soft steel bar market still is largely confined to sentiment, although one maker claims a 20 per cent increase in bookings last week. Consumers as a class are not yet satisfied on the matter of price and are not replenishing their stocks. But in some instances stocks have become so low that heavier buying has been necessary. Makers of bars believe consumers do not realize the extent to which production has been cut, and that further reductions for the July 4 holiday will compel a revision of the consumers' viewpoint. While most of the current small business in soft steel bars is undoubtedly going at $2.25c, Chicago, this level is weak and doubtless could be broken through with an attractive specification. On the outskirts of the Chicago district where Pittsburgh competition is met, the price figures back to less than 2.25c, Chicago.

Specifications for bar iron and rail steel bars continue light, and output has been further restricted by shutdowns of some mills for two weeks. One small mill is making a price of 2.15c, Chicago, on bar iron but the other makers are holding to 2.20c. Rail steel continues at 2.10c to 2.13c, Chicago.

Sales Slightly Better

Boston, July 1.—Leading sellers are holding firmly at 2.20c base Pittsburgh for soft steel bars and if some tonnage is being placed below this figure it is relatively small as several large orders have recently tried out the market. Sales of the past week show a slight increase over those of the week previous although still less than half the volume at this time a year ago, and also less than half the average through the first three months of this year.

Some Shading in East

New York, July 1.—While most of the current business in steel bars continues to bring 2.20c base Pittsburgh, equivalent to 2.54c delivered New York, some instances have developed where 2.15c has been done.

Sales Best in Weeks

Philadelphia, July 1.—Sales of steel bars in eastern territory have been the best the past week in some time. Most of the current business is going at 2.20c, base, Pittsburgh, although in some cases 2.15c, Pittsburgh, is being done.

Specifications in Small Lots

Pittsburgh, July 1.—Merchant steel bar buyers are adhering to their policy adopted some time ago of ordering only what is absolutely necessary. Consequently specifications received by mills here are small lots. So far nothing less than 2.15c, base Pittsburgh, has appeared and on the usual run of small orders 2.20c still is obtained.

Refined iron bars are quoted at 3.00c with demand also limited. Double refined iron is quoted at 4.75c with little moving. Staybolt iron bars bring 6.50c and even 7.00c, base Pittsburgh, is quoted on this product.

Buyers Little More Interested

Cleveland, July 1.—Buyers of steel bars continue to show a little more interest in the market but this is not reflected in the volume of sales which continue of a very miscellaneous character and of light aggregate tonnage. It is reported that some large makers of steel bars who have been holding the market at 2.20c, Pittsburgh, now are willing to do 2.15c. The market on hoops and bands continues irregular. Cut hoops are quoted at 2.75c, Pittsburgh, but where plate sizes are involved, some exceedingly low prices are being made, almost down to the standard plate market of 2.15c to 2.20c.

New Extras Now Apply

Pittsburgh, July 1.—A fair total of business is coming through in cold-finished steel bars at 2.90c, base Pittsburgh. Some third quarter contracts have been written at that figure within the past week. The end of second quarter deliveries marks the passing of the old list of extras, and the March 10 list of new extras now is in force. Orders for less-than-carloads are taken at as high as 3.15c although some lower figures are made to preferential customers whose minimum orders as a rule constitute single carloads. Releases are coming from automotive or allied accessory industries here and there and are in themselves an encouraging factor to the trade.

Hoop Orders Are Limited

HOOP PRICES, PAGE 5

Pittsburgh, July 1.—Occasional orders for limited tonnages of hoops and bands are being received but most tonnages are small. One order for auto rim stock enables one producer to operate its 10-inch mill this week, but most mills are running on accumulations. Prices usually quoted are 2.60c to 2.75c, base Pittsburgh, although on narrow hoops and bands up to 2.90c and even 3.00c are quoted. Operations do not average above 40 per cent.

Bolt, Nut, Rivet Prices Shaded Further

NUT AND BOLT PRICES, PAGE 66

Pittsburgh, July 1.—The third quarter opens in the nut and bolt market with a few contracts being taken for that period on the basis of 60 and 20 off on large machine bolts. Much second quarter tonnage however, has lapsed and against these contracts specifications continue to be received in small tonnages as needed by jobbers and large users. Spot buying is extremely limited, an occasional carload being purchased. Operations are not increasing and remain at about a 35 or 40 cent. The usual price on structural rivets is 2.60c base Pittsburgh, although some large tonnages carry a preferential figure slightly lower, and some orders unattractive as to size bring 2.65c. Single carloads are bought from time to time.

Bolts and Rivets Lower

New York, July 1.—In some cases contract prices on bolts have been revised to 70 and 5 off for machine bolts larger and longer than 3/8 x 4 inches with hot-presed nuts. On especially attractive business rivets now are being sold as low as 2.40c base Pittsburgh. Small rivets are going as low as 75 off the list.

Placing Rivet Needs

Cleveland, July 1.—Consumers are placing their regular third quarter rivet requirements on the basis of 2.60c, Pittsburgh for large rivets and 70, 10 and 5 off for small. Spot demand is small and shading of quoted prices is common.

Bolt and nut orders are reported slightly heavier although the volume of business being received is not large. Prices are unchanged from a week ago, and new third quarter quotations have not yet been announced.

Inventory Taking Interferes

Chicago, July 1.—Demand for bolts and nuts has fallen to a lower level because of the seasonal early July shutdown of most users. Many holdups are being received on this account and it will be late July before makers see a revival. On spot business 70 off can be done on large machine bolts but contracting, which is light, continues at 60 and 20 off.

J. L. Mott Co. Is Placed in Receiver's Hands

New York, July 1.—The J. L. Mott Co., Trenton, N. J., one of the largest manufacturers of sanitary ware, has been placed in the hands of Robert K. Bowman and Charles H. Baker as receivers. Mr. Bowman is vice president of the J. L. Mott Co., and Mr. Baker is publisher of the *Trenton State Gazette*. The receivers were appointed by Federal Judge John Rellstab at Trenton on a petition by the Tottenville Copper Co., Inc., which avers there is due against the Mott firm claims in excess of $1,700,000. The Tottenville company states that while the Mott company's assets are admittedly far greater than its liabilities, many creditors have threatened suits that would result in attachment of property and cessation of operation. The plaintiff lists its claim at $48,581 for metals sold to the defendant, of which amount $41,381 is said to be past due. The petition alleges that the Mott company has not sufficient cash to meet even comparatively small debts. The plaintiff asks that, at the proper time, if the plant does not prove a going concern under the recivership, it be sold to meet the claims of the creditors.

The Mott company, which was organized in 1903, has authorized capital stock amounting to $6,000,000, divided into 30,000 shares of preferred and the same amount of common at $100 par value. The bill sets forth that 9644 shares of preferred and 26,937 shares of

common are now outstanding. In addition to the stock, the company is declared to have outstanding $2,000,000 of bonds, secured by first mortgages, on all of its real estate.

Victor N. Roadstrum, 118 Fifth avenue, New York, executive manager of the Mott company, in a statement declares the action was taken at the instance of the directors to conserve the company's assets and protect its creditors. He said the company has quick assets of more than twice its quick liabilities, and, in addition, is the owner of a majority of the capital stock of many affiliated corporations operating successfully in the business of jobbing plumbers' supplies, which will not be affected by the receivership of the parent company.

"The nature of the business of the parent company and of some of its subsidiaries have changed materially, owing to changing tastes of users of plumbing supplies during the past several years, said Mr. Roadstrum. This change, as well as the largely increased business of the company, has required and now requires, large capital expenditures. The company is not in immediate possession of this required capital.

"The internal situation in the company appears to make negotiation for these capital requirements impossible, except through the intermediary of a receivership. It is the purpose and expectation of the directors that this receivership will be only temporary and that it will result in a reorganization in the near future which will meet all capital requirements.

"Of a total indebtedness of about $3,798,000, the sum of $1,000,000 is held by various banks, including the Guaranty Trust Co. of New York, the Bank of America, the Bank of the Manhattan Co., and the Broad street National Bank of Trenton, N. J.

"A bonded indebtedness of $2,000,000 issued against the company's real estate is outstanding. The balance of the company's indebtedness consists of current merchandise obligations, widely scattered and in moderate amounts."

Open Cotton Ties

Pittsburgh, July 1.—The cotton tie market was opened June 30 for 1924 but neither the Carnegie Steel Co. or the independent producers have named a definite figure. It is understood various conditions are being met and prices are quoted delivered consuming points. The 1923 market on cotton ties was opened late in April last year at $1.60 and the increase of 1 cent per month since July 1, 1923 for carrying charges brought the quotation for July 1 this year to $1.73, base Pittsburgh, per bundle of 45 pounds. The annual prices on cotton ties since 1902 are as follows:

1909	0.70
1910	0.75
1911	0.75
1912	0.70
1913	0.80
1914	0.65
1915	0.85
1916	1.35
1917	2.10
1918	1.90
1919	1.70
1920	2.00
1921*	1.35
1922	1.10
1923	1.60

*Later revised to $1.30.

Place Ship Plate Orders

Eastern Buyers Close For Around 12,000 Tons—Builders Figuring On Four Lake Steamers—Some Tank Awards Made

PLATE PRICES, PAGE 5

Philadelphia, July 1.—Plate sales are better. The Steel corporation has taken 7000 tons for a liner for the Matson Navigation Co. Otherwise business is mostly in small lots for quick shipment. Most of the eastern plants are down all week and some for a half week over the Fourth. The Pennsylvania railroad has placed some plates, and also the Reading railroad. The market is 1.90c to 2.00c, Pittsburgh. Prices as low as 1.85c and 1.80c are exceptional.

Book Ship and Tank Plates

New York, July 1.—The Wm. Cramp & Sons Ship & Engine Building Co. has booked the large passenger steamer on which the Matson Navigation Co. has been negotiating. The vessel is for the American-Hawaiian trade. The steel, 7000 tons, will be furnished by the United States Steel Corp. The New York-Porto Rico Steamship Co. has placed a vessel with the Newport News Shipbuilding & Drydock Co., involving 3800 tons of steel, which also has gone to the Steel corporation. The Bethlehem Steel Co. has booked 2000 tons of plates and shapes from the government for delivery at the Panama Canal and it is understood that the steel is for making ship repairs. The Riter-Conley Co. has booked eight tanks involving about 2500 tons of steel for the Standard Oil Co. of Louisiana. The Humble Oil Co. has placed six 80,000-barrel tanks with the Chicago Bridge & Iron Works, involving 1800 tons. The Standard Oil Co. of New York has placed a tank at Ogdensburg, N. Y., with the Warren City Tank & Boiler Works, 200 tons. The Winston Contracting Co., Kingston, N. Y., has booked a contract for building a pipe line at Providence, 1200 tons of plates. The Standard Oil Co. of New Jersey is in the market for 1600 tons of plates for tanks to be built at Bayway, N. J., and abroad. The market on the usual run of plate business continues 1.90c to 2.00c, Pittsburgh.

Tonnages Are Small

Pittsburgh, July 1.—Large plate tonnages are not at present under negotiation here, the majority of requirements being within the 200 to 500-ton range. One or two inquiries are pending for water tanks, stand pipes, barges, etc., and boiler makers are placing their limited requirements, but large oil tank needs appear to have been met for the time. One or two inquiries are current for water tanks for Moundsville, W. Va., as well as for a steel interest at Wheeling. The American Bridge Co. has received the formal order for the two dump scows for the United States Engineers, Pittsburgh, requiring 225 tons, and it also received an order for two barges from the Missouri-Portland Cement Co., St. Louis, and a transfer barge for the Missouri-Illinois Railway Co., Bonneterre, Mo. These three jobs involve a total of about 1075 tons, mostly plates. Purchasing agents appear to be growing somewhat discouraged over the lack of success attending their efforts to develop lower quotations than 2.15c, Pittsburgh, and that continues the market's minimum even on attractive tonnages. The usual run of orders carry a 2.20c, Pittsburgh, price.

Four Ore Freighters Pending

Cleveland, July 1.—Chief importance in the plate market is ascribed to the pending negotiations for lake ore freighters referred to last week which, it now is learned definitely, call for four vessels involving approximately 20,000 tons of steel, mostly plates. These boats are planned for next spring's delivery and with the lower steel prices and the yards light of work, the present time is believed to offer a favorable opportunity to close contracts. Tonnage in plates continues only fair. Some sellers, however, report their bookings in June were the best in several months. Prices have not developed much change although some large producers which recently have been holding for 2.20c, Pittsburgh, as their general quotation now, it is reported, will take business at 2.15c. In some cases of close competition, 2.10c, Pittsburgh, sometimes appears but these instances are rare.

Prices Softer at Chicago

Chicago, July 1.—Low demand for plates has softened the price materially and a range of 2.25c to 2.35c, Chicago, now describes the market. The competition for oil storage tank business in southern points, where the freight from the Pittsburgh district is within 7 cents of the rate from Chicago, has been a material factor. Inquiry from freight car interests still is nil. The largest plate inquiry is that of Denver, Colo., for 2000 tons for a gas holder. The Humble Oil Co. has divided oil storage tank business aggregating 4000 tons between the Chicago Bridge & Iron Works and the Grover Corp.

Replogle Steel Options Warren Pipe Foundry

New York, July 1.—An option on the stock of the Warren Foundry & Machine Co., Phillipsburg, N. J., has been taken by the Replogle Steel Co. The price agreed upon is $400 per share and the aggregate amount involved in the transaction, $4,000,000. A bond for $50,000 has been deposited as a guarantee in the negotiations.

The present outlook is that the sale will be consummated and that the property will be taken over the last week in August.

The Warren Foundry & Machine Co. is one of the oldest and largest individual manufacturers of cast iron pipe in the northeastern part of the United States. The Replogle Steel Co. has blast furnaces at Wharton, N. J., and also controls the Empire Steel & Iron Co. with blast furnaces at Catasauqua, Pa., and Oxford, N. J. It is assumed that the foundry property is sought to provide a large fixed source of demand for the output of these furnaces.

Concrete Jobs Are Few

Larger Projects Nearly All Placed, Leaving Little Prospective Business—Palmer House, Chicago, 1500 Tons, Awarded

REINFORCING BAR PRICES, PAGE 5

Chicago, July 1.—One by one the larger reinforcing bar jobs that have been before sellers are being placed but new projects are not sufficient to maintain the balance. The slowing-down in estimating has had the effect of sharpening competition for current business. It is said the Palmer House, Chicago, the last of the large pending projects, has developed a price so low as to neturalize its desirability. Jobs under 100 tons are becoming scarcer and though building permit figures indicate considerable building, reinforcing bar sales have been declining for some weeks. A range of 2.35 to 2.45c, Chicago, still describes the market.

Roads Taking Small Lots

Pittsburgh, July 1.—Orders for reinforcing bars have been few the past week, consisting mainly of small lots usually for Pennsylvania state road work. One or two fair sized inquiries still are pending. One other seller has joined the group quoting 2.15c base Pittsburgh, as a mill price, and is understood to be naming 2.30c base Pittsburgh, on bars from warehouse stocks. Some mills will not quote less than 2.20c base Pittsburgh, as a mill figure.

Most Tonnages for Roads

Buffalo, July 1.—Principal inquiry for reinforcing bars comes from road builders. A number of good sized contracts awarded last week will result in bar orders being placed within a few days. Lots range from 25 to 125 tons. There is little inquiry for bars for structural work.

Demand Slack at Cincinnati

Cincinnati O. June 30.—Demand for concrete reinforcing bars continues to shrink and while some business is under negotiation no haste is shown in closing. Prices are unchanged. On mill shipments the market continues 2.20 Pittsburgh and on warehouse shipments 3.40 base Cincinnati is being done. The Ferro Concrete Construction Co, will close on its inquiry for 400 tons this week.

Better Feeling Evident

Cleveland, July 1.—Sellers of reinforcing bars are less inclined to shade quotations and buyers feel better in regard to the future and less inclined to withhold orders. Much tonnage in small lots is being placed but larger projects are lacking. The initial contract for the Cleveland union station retaining mills upon which bid recently went in has not yet been awarded. Rail steel bars are quoted at 2.00c to 2.10c and the open price on billet bars is 2.20c.

CONCRETE CONTRACTS PLACED

Awards this week	**3,580 tons**
Awards last week	**6,655 tons**
Awards two weeks ago	**3,720 tons**

1500 tons, Palmer house, Chicago, to Joseph T. Ryerson & Son, Inc.
500 tons Delaware bridge anchorages to Concrete Steel Co.
500 tons for bridge at Phoenixville, Pa., to Edward T. Edwards, Columbia, Pa.
225 tons, Belt building, Chicago, to Concrete Steel Co.
200 tons, Hotel Androy, Superior, Wis., to the American System of Reinforcing.
200 tons, Uptown theater for Balaban & Katz, Chicago, to the American System of Reinforcing.
120 tons, St. Vincent's hotel, Benton Harbor, Mich., to Concrete Steel Co.
100 tons, Concordia college, Milwaukee, to the American System of Reinforcing.
100 tons, Alton National bank, St. Louis, to Jos. T. Ryerson & Son, Inc.
100 tons, Pennsylvania state road work, to the Concrete Steel Co., Pittsburgh.
35 tons for Cushman hydroelectric project, Tacoma, Wash., to A. Guthrie & Co., Portland, Oreg.; bid $118,425.
Tonnage unstated, Motor Truck Terminal building, Portland, Oreg., to Truscon Steel Co.
Tonnage unstated, bridge over Yellowstone river, Glendive, Mont., federal aid project, to unnamed fabricator.

CONCRETE CONTRACTS PENDING

250 tons for telephone exchange Canton, O., for Ohio Bell Telephone Co. General contract to Crowell & Little Construction Co., Cleveland.
180 tons foundation for boiler house for Cleveland Electric Illuminating Co. Bids in.
150 tons, building for the Citizens' Title & Trust Co., Uniontown, Pa.; steel not yet awarded by Mellon-Stuart Co., general contractor.
Tonnage unstated, 12-story office building with 6-story garage attached for Franklin Street Building Corp., Chicago; plans being drawn by David S. Klafter, 64 West Randolph street, Chicago.

Pipe Buying Small

Steady Stream of Orders Without Fractures—Operation Steady

PIPE PRICES, PAGE 5 AND 66

Pittsburgh, July 1.—Steady orders for small lots continue to be the feature of the tubular goods market although in standard full weight merchant pipe jobbers still give mills little to work upon. They are paring down requirements and are ordering only what is absolutely needed to keep stocks balanced. Mills are keeping their prices firm despite reports circulated by certain middle interests that lower quotations would soon be forthcoming. In oil country goods curtailed drilling programs on the part of several oil companies have been a deterrent but occasionally an order for one to four carloads is placed for casing, surface, surface pipe or line pipe. In connection with the latter grade a large producer here recently obtained an order for about 7500 tons of 6-inch and 8-inch line pipe for a 60-mile installation in California. Pipe mill operations for the most part continue at 65 or 70 per cent.

Most Orders Are Small

New York, July 1.—Few contracts of size are being placed in the eastern cast iron pipe market. However, contracts are sufficiently numerous to keep business fairly active. Municipal buying is lacking with little in prospect for the immediate future. Prices are unchanged.

Low Prices on Big Sizes

Chicago, July 1.—Lower than $42, Birmingham, was done by Detroit recently in its purchase of large sizes of cast iron pipe when $50.95, delivered was made on 48-inch pipe, $51.95 on 36 and 30-inch pipe and $51.55 on 24-inch pipe. Sales have been few and small recently and in the larger sizes especially producers can handle more work. On the average run of business the price of pipe 6-inch and over, Chicago, is $52.20 to $54.20 and on 4-inch, $58.20 Chicago.

Madison, Wis., has deferred until next year purchase of a considerable tonnage of cast iron pipe for three miles of force main. The city engineer says the pipe required for this work is now being quoted at $58 per ton and he expects a large saving if the pipe is bought later.

Trade Is Looking Up

Birmingham, June 30.—Cast iron pipe is looking up and a better feeling is noted. A number of inquiries have come in recently and more satisfying specifications are being bid on. Contracts of greater volume are in sight. Prices are $1 lower than a month ago. 6-inch and over now being quoted at $47 to $48. It is reported concessions have been made to induce new business.

PIPE CONTRACTS PLACED

500 tons, Marshall, Tex., to National Cast Iron Pipe Co.
500 tons, Jackson, Mich., to James B. Clow & Sons.
350 tons, Flat Rock, Mich., to National Iron Pipe Co.
200 tons, Buffalo, to James B. Clow & Sons.

PIPE CONTRACTS PENDING

400 tons, Winthrop Harbor, Ill.; bids in.
350 tons, Des Plaines, Ill.; bids in.

Tin Plate Buying

One-Half of Normal—200,000 Boxes For Export Negotiated

TIN PLATE PRICES, PAGE 5

Pittsburgh, July 1.—With August tin plate specifications well in hand and September's due by July 15, no sudden change for the better is expected in the tin plate market for July. Operations for the month may not increase much over 50 per cent, as compared with the recently sustained average of approximately 65 per cent of capacity. Some tin plate mills in the American Sheet & Tin Plate Co.'s group, as well as some of the independents, will go down further during the July vacation period. Buying for the third quarter was just about half of what it should have been, but the heavy buying done earlier in the year apparently goes far toward satisfying some of the present demand for finished cans. Canmakers are more concerned about disposing of their finished cans and converting their stocks of tin plate into cans than they are about further purchases. They are carefully watching the crop reports which in some cases are encouraging, and in others discouraging. Brokers report that only now are they disposing of canned goods to be packed which should have been sold 60 days ago, and therefore they are anticipating a shortage later on. The leading interest reports a fair movement in the export market at prices about $5 per ton higher than the English bid. One late order going to the leading interest for oil can sizes for Japan calls for 40,000 base boxes. The

domestic price still is firm at $5.50 per base box of 100 pounds, Pittsburgh. The usual price on stock plate is $5.15 per base box.

Negotiating 200,000 Boxes

New York, July 1.—The Standard Oil Co. of New Jersey is negotiating for 200,000 boxes of tin plate for export and is expected to place this business shortly. Tin plate specifications have increased due to the warmer weather.

Valley Mills Idle

Youngstown, O., July 1.—All hot mills in this district are idle this week on account of high water and although the river stage recedes no attempt will be made to resume activity until next Monday. While regular customers are beginning to send in specifications for tin plate in anticipation of a normal vegetable and fruit pack the volume of new inquiry shows no immediate signs of an increase. The market is quoted at $5.50 per base box, Pittsburgh.

Few More Orders

Are Current in Ferroalloys—Some Last Half Ferrosilicon Bought

FERROALLOY PRICES, PAGE 5

New York, July 1.—An inquiry has come out for 300 to 500 tons of ferromanganese. This is the largest inquiry for this metal in some time. Current business continues restricted as a rule to carload tonnages for early shipment and this business is bringing $107.50 duty paid tidewater.

Due to resale offerings of English spiegeleisen on docks at various ports, the market on spiegeleisen has weakened. Domestic spiegeleisen now may be quoted at $34 to $36 furnace for 20 per cent metal, and English spiegeleisen at $33 to $34 tidewater.

Forwarding Instructions Received

Pittsburgh, July 1.—Forwarding instructions still continue to come in on ferromanganese contracts, which constitutes the major portion of activity in the ferroalloys market. One or two of these consumers are asking that shipments be anticipated but some material scheduled for September and October delivery is being taken in now. In contrast a few small requests come in asking shipments be held up for a week or two longer. New orders as well as inquiries are scattered and confined to single carloads. No interest as yet is manifested in contracting for future delivery. The price is unchanged at $107.50, seaboard base.

Spiegeleisen is quiet, with $34, furnace, quoted on the 16 to 19 per cent grade, and $35 furnace, on the 19 to 21 per cent material. Since these prices, however, are available on small lots it is understood that larger tonnage inquiries would develop lower figures. Because of the low rate of operations on the part of tool steel manufacturers, the demand for ferrotungsten, ferrovanadium, etc., is practically absent. One or two consumers of 50 per cent ferrosilicon who did not close up for their entire year's requirements have just signed contracts for last half needs. One which used 700 or 800 tons in the first half probably will require 500 or 600 tons in the second. This has been bought at $75, freight allowed.

Sheet Releases Are Larger

Motorcar Accessory Makers Showing Some Activity—Inquiries Involve More Tonnage—Slightly Better Operations—Prices Steady

SHEET PRICES, PAGE 5

Pittsburgh, July 1.—A small measure of improvement is noted in the sheet market. Buyers are feeling more encouraged. The leading interest reports an increase of only a fraction above 1 per cent last week over the preceding week's average operations, and improvement among independent sheet producers is spotty. The last two weeks of June were better than the first two. July, however, usually is a quiet month in hot mill operations, but the feeling is that the general average will not be greatly lowered from the present figure of 40 to 45 per cent. Small buying is the rule in all grades of sheets and even in the export market orders dribble in for only as much as will cover needs in sight. Sheet orders are received daily and the aggregate each day is fair. Each order is far less than it should be, mainly for the reason that heavy purchases of the former part of the year were not followed by the expected heavy consumption. Buying from jobbers is on a fairly high plane because so many sheet consumers, ordinarily buying at least a carload of sheets at a time from the mills, now are going to the jobbers with an order for a carload made up of sheets, plates, bars and other steel products. In the matter of price there still is a divergence of opinion. The American Sheet & Tin Plate Co. insofar as the general market is concerned is maintaining 2.80c, 3.65c and 4.80c, Pittsburgh, on blue annealed, black and galvanized sheets, respectively. Concessions of more than $1 or $2 per ton under those prices by independent sheet producers are rare, and usually the result of distress circumstances. One such offer is noted on black sheets where 3.45c was quoted, another on galvanized where lower than 4.60c was named. The usual concession on black is to 3.60c, and on galvanized to 4.70c. The 5.10c, Pittsburgh, price on full-finished automobile sheets still is the representative market figure. In this last named grade, improvement is slow but more or less steady. Tonnages bought some time ago are being shipped and sheet supplies for most of the new models scheduled for presentation this month were shipped some six weeks ago.

Market Is Brighter

Youngstown, O., July 1.—Despite the usual period of midsummer dullness the outlook in the sheet market for the second consecutive week appears brighter. The Detroit market is taking on more life, and additional releases of tonnages held for several weeks on mill floors have been issued by makers of accessories supplying builders of medium and high-priced cars. Prices continue firm with the exception of one or two outside mills which for several weeks have been below the general market level. Black generally is quotable at 3.65c with 3.60c as minimum, blue annealed at 2.75c to 2.80c and galvanized at 4.80c, although competition encountered in the latter grade ranges from 4.65c to 4.75c, Pittsburgh. Some producers maintain that prices are not consistent with current operations. They complain prices are on the losing side and are hoping that broader operating schedules will bring some relief. One bright spot in the market is the stock depletion that generally exists at many plants of sheet producers. About two months ago operation began to slacken and numerous orders were filled out of mill accumulations. One producer at the beginning of the second quarter was carrying from 10,000 to 12,000 tons of miscellaneous sheets in warehouse; today as divulged by his stocklists surplus items have receded to 3100 tons. This is typical of numerous mills in this district at least. Some keen market observers are taking advantage of the situation by purchasing material wherever items fit their requirements. They report, however, that about the only material available in suitable tonnage is in 20 to 22 gage. The majority of producers plan to shut down from July for the balance of the week but will resume next Monday. High water in the upper part of the valley made it impossible to start two plants this week.

Eastern Sales Are Fair

Philadelphia, July 1.—Fair spot buying of sheets is noted. Except in the anthracite trade, consumers generally refrain from contracting. Black sheets are weaker, due largely to competition in automobile seconds. Black sheets are 3.50c to 3.65c, Pittsburgh. Blue annealed sheets generally are 2.80c, Pittsburgh. Some are going at 2.75c to 2.70c. Galvanized sheets are 4.70c to 4.80c.

Not Disturbed Over Situation

Chicago, July 1.—Makers of steel sheets claim the lack of forward buying is not a source of worry as they expect prices to be much better toward the end of the third quarter. New business is at a low ebb and the disparity between capacity and production is the greater because of the cool weather. Quotations generally are 4.80c, Pittsburgh, on galvanized, 3.65c, on black and 2.80c, on blue annealed, but are weak.

To Close For Holiday

Pittsburgh, July 1.—The holiday this week will cut into steelmaking operations somewhat since many steel plants will shut down July for the remainder of the week. The Carnegie Steel Co., operating about 41 or 42 per cent of ingot-making capacity, will probably show between 30 and 35 per cent for the week in final analysis. It has added a blast furnace at Clairton, making its total active 28 out of 59. The Pittsburgh Steel Co. blew out one of its Monessen stacks on June 28, leaving its active blast furnace capacity 50 per cent, which is the same basis for the Jones & Laughlin Steel Corp., which now has 6 out of 12 blast furnaces blowing as against 8 on May 31, one going out at Eliza and one at Aliquippa.

Many Awards in Shapes

Activity in Construction Continues, With Some Larger Tonnages—Shading on Attractive Lots in Some Instances Though Prices Hold

STRUCTURAL SHAPE PRICES, PAGE 5

Chicago, July 1.—Structural awards the past week aggregate about 10,000 tons of plain material, of which one maker obtained 8000 tons. Fabricators are in need of business and competition continues keen. Rumor has it that 2.25c, Chicago, can be done on shapes. Mills claim to be adhering to 2.35c, Chicago, but the price is weak and certainly less can be done outside of Chicago where Pittsburgh competition is met, if not in Chicago itself.

New Work Continues

Boston, July 1.—Fabricators in New England find new work developing encouragingly and most are working on full time schedules. Prices are somewhat uncertain and most authorities feel the bottom has not yet been reached. Larger eastern mills are holding to 2.15c base, Pittsburgh, even in the face of losing attractive tonnages to smaller mills at 2.00c, Pittsburgh. One eastern mill is quoting 2.00c freely and is obtaining considerable tonnage. Rumors of prices below 2.00c base, Pittsburgh, are freely heard. Plates are quoted at 1.90c base, Pittsburgh, with some concessions for attractive tonnages. Boston fabricators are figuring on a total of over 4000 tons of current work due to close within a week or ten days.

New York Market Active

New York, July 1.—While the total structural tonnage placed is not as large as last week, orders are more numerous and the market continues to maintain an active aspect. In adjacent districts buying apparently is heavier than last week. Among awards are 2400 tons for a power plant for the Utica Gas & Electric Co., Utica, N. Y., and 2000 tons for Cuban warehouses. Bridgework is more active than in two or three weeks, although the tonnages involved for the most part are small. The plain shape market may still be quoted at around 2.10c to 2.20c, Pittsburgh, with concessions on attractive lots.

Fair Buying in East

Philadelphia, July 1.—Structural shape buying is of fair proportions. The usual price continues to be 2.15c, base, Pittsburgh. Some makers will go to 2.00c, base, Pittsburgh, on desirable business and in rare cases this has been shaded to 1.95c, Pittsburgh.

1200-Ton Job the Largest

Pittsburgh, July 1.—Structural shape awards are slightly more numerous although most tonnages are small, below 500 tons. However, the McClintic-Marshall Co. was the successful bidder on the machine shop and main building for the expansion of the Westinghouse Electric & Mfg. Co. at Mansfield, O., involving 1200 tons. The Jones & Laughlin Steel Corp. was awarded 350 tons for the Columbus Bolt Works, Columbus, O., recently credited to the International Hoist & Derrick Co. One local fabricator on a 1500-ton order for plates and shapes was unable to obtain a lower figure than 2.15c, base Pittsburgh, and that still appears to be the minimum of the market. On small orders, 2.20c base Pittsburgh, applies. On material fabricated and erected competition still is keen, a price on some plain beam work recently developed being $70, $72 or $74 per ton. The Citizens' Title & Trust Co. building at Uniontown, Pa., still is in abeyance, as are a number of other jobs involving up to 200 or 300 tons.

Activity Is Lacking

Cleveland, July 1.—Little improvement in the district structural market is apparent from the tonnage standpoint, although the feeling is more cheerful. Fabricators have been unsuccessful in uncovering new projects which entail any sizable tonnage and are centering their attention on jobs of an insignificant character. The ore bridge for the New York Central railroad at Ashtabula, O., involving about 1000 tons, and the 200-ton job for the Sandusky Cement Co., Sandusky, O., still are pending, although early action is expected. Plain shapes continue at 2.20c, Pittsburgh.

STRUCTURAL CONTRACTS PLACED

Building awards this week..... 25,425 tons
Building awards last week..... 34,144 tons
Building awards two weeks ago.... 16,879 tons

2400 tons, power plant for the Utica Gas & Electric Co., Utica, N. Y., placed through Thomas E. Murray, engineer, 55 Duane street, New York City, to the American Bridge Co.

2000 tons, five warehouses in Cuba, placed through the Frederick Snare Corp., 114 Liberty street, New York City, general contractor, with the United States Steel Products Co.

2000 tons, Catholic club, Brooklyn, to the Levering & Garrigues Co. through William Kennedy Construction Co., general contractor, 215 Montague street, Brooklyn.

1200 tons, machine shop and main building for the Westinghouse Electric & Mfg. Co., Mansfield, O., to the McClintic-Marshall Co.

1100 tons Athens Athletc club, Oakland, Cal., to Judson Mfg. Co.; MacDonald & Kahn, general contractors.

1000 tons, Reis loft, 24 W. Fortieth street, New York, to Levering & Garrigues Co.

1000 tons powerhouse H. M. Byllesby & Co., North Bend, Ore., to Minneapolis Steel & Machinery Co.

1000 tons, 5-story office building for Southern California Telephone Co., Washington and Grand, to Union Iron Works of Los Angeles.

900 tons, power plant for the United Illuminating Co., Bridgeport, Conn., G. F. Watts Corp., 50 Church street, New York City, awarded erection contract, places steel fabrication with Shoemaker Bridge Co.

900 tons, Northumberland county bridge, Milton, Pa., to Bethlehem Steel Corp.

800 tons, office building, Miami, Fla., to American Bridge Co.

647 tons, power house at Iowana, Iowa, for the Riverside Power Mfg. Co., to Rock Island Bridge & Iron Co.

600 tons, power house at Davenport, Iowa, for the United Light & Power Co., to Rock Island Bridge & Power Co.

600 tons, bank building for First National Bank building, Hammond, Ind., to Duffin Iron Works.

600 tons, shop for the transit commission, at Coney Island, New York City, to the American Bridge Co.; was reported in a former issue as informally placed with this interest.

600 tons, loft building, W. Thirty-ninth street, to Harris Structural Steel Co.

550 tons, apartment, W. Eighty-sixth street, to Taylor-Fichter Steel Construction Co.

550 tons, garage, Springfield, Mass., to the American Bridge Co.

500 tons, theater building, Boston, to the American Bridge Co.

500 tons, plates, two barges for the Missouri-Portland Cement Co., St. Louis, to the American Bridge Co.

475 tons new Bank of California building, Portland, Oreg., to Poole & McGonigle.

400 tons, for 12-story loft building, W. Forty-eighth street, New York, to Easton Structural Steel Co.

400 tons, for addition to plant of Dahlstrom Metallic Door Co., Jamestown, N. Y., to Kellogg Structural Steel Co., Buffalo.

350 tons, factory building for the Champion Fibre Co., Canton, N. C., to the Converse Bridge Co.

350 tons, transfer barge for the Missouri-Illinois Railway Co., Bonneterre, Mo., to the American Bridge Co.

350 tons, building for the Columbus Bolt Works, Columbus, O., to the Jones & Laughlin Steel Corp., recently credited to the International Hoist & Derrick Co.

300 tons, highway bridge, Pittston, Pa., to unnamed fabricator.

300 tons, Church of the Blessed Sacrament, New York City, to the McClintic-Marshall Co.

300 tons, shops for Central of Georgia railway, Savannah, Ga., to The Steel Products Co.

300 tons, for theater, 149th street, New York, to A. E. Norton, Inc.

300 tons, for institutional building, Jennings avenue, West Farms Road, N, Y., to unnamed fabricator.

270 tons for Whitestone Reclamation district, Loomis, Wash., to King Bros., Portland, Oreg.; bid $34,077.

263 tons, power house and gates at Merrill, Wis., for the Wisconsin Valley Electric Co., Wausau, Wis., to the Wausau Iron Works.

250 tons, tunnel, Philadelphia, to Bethlehem Steel Corp.

225 tons addition to First National Bank building, Portsmouth, O., to Massillon Bridge Co.

225 tons, plates, two dump scows for the United States Engineers, Pittsburgh, to the American Bridge Co.

205 tons, bridges for Missouri Pacific railroad, to American Bridge Co.

200 tons, for additional work for the Public Service Corp., Newark, N. J., to the Shoemaker Bridge Co.

200 tons Mission Beach bath house, San Diego, Cal., to Virginia Bridge & Iron Co.

200 tons, lime kiln for the Chazy Lime & Marble Co., Chazy, N. Y., to the American Bridge Co.

200 tons, Woolworth building, Hartford, Conn., to the Providence Iron & Steel Co.

200 tons, for stables, Sheffield Farms Co., Flushing, L. I., to Hinkle Iron Co.

200 tons, for Presto Lunch Co., Newark, N. J., to Hedden Iron Construction Co.

200 tons, plant addition for the Pardee Steel Corp., Perth Amboy, N. J. through the Foundation Co., general contractor, 120 Liberty street, New York, to the Belmont Iron Works.

160 tons, building for Schaffer Oil Co. to Kaw Boiler Works.

150 tons, bridge work for the Lehigh Valley railroad to the Bethlehem Steel Corp.

150 tons Kleiber Co. plant, Tenth and Folsom streets, San Francisco, to Ralston Iron Works.

125 tons 3-story addition to Times-Mirror Printing Co., at rear of 117 South Spring street, Los Angeles, to Baker Iron Works.

105 tons, building for Bell & Zoller Mining Co., to Wisconsin Bridge & Iron Co.

100 tons, building for unstated owner at Canton, Miss., to St. Louis Structural Steel Co.

100 tons, highway bridge, Rutland, Vt., to the Phoenix Bridge Works.

100 tons, Elk's club at Moline, Ill., to the Davenport Machine & Foundry Co.

Tonnage unstated, building for Motor Truck Terminal, Portland, Oreg., to City Iron Works.

STRUCTURAL CONTRACTS PENDING

25,000 tons, approaches Delaware river bridge, Philadelphia; bids to L opened July 16.

3000 tons, bridges at George's and Summit, Dela. and Chesapeake City, Md., over Chesapeake & Delaware canal; Phoenix Bridge Co. low bidder.

2000 tons, addition to Dennis hotel, Atlantic City; plans being revised by general contractors, Turner Construction Co.

2000 tons, Lumber Exchange building, Chicago; plans by B. H. Marshall, 612 Sheridan road, Wilmette, Ill.

2000 tons, gas holder for Denver, Colo.; bids in.

1500 tons, bridge at Portland, Oreg.; bids in.

1400 tons, two theater projects of 700 tons each at Chicago; plans by Alfred S.

Alschuler, 28 East Jackson street, Chicago.
1275 tons, Harvard bridge across Charles river, Boston, bids close July 3.
1000 tons, apartment, 120 W. 45th street, New York; bids being taken. Charles Myers, 31 Union Square, engineer.
1000 tons, Sokolski apartment,, Ninety-fifth avenue, New York; bids being taken.
1000 tons, coal breaker, for the Chateaugay Ore Co., Lion Mountain, N. Y., bids asked.
845 tons bridges for Big Four railroad in Indiana, bids in.
800 tons, coal breaker, Colonial Colliery Co., Pittsburgh; bids being taken.
560 tons Montlake bridge, Seattle; bids June 27.
500 tons, apartment, 308 W. 30th street, New York; bids being taken.
500 tons, 6-story hotel, Salem, Mass., bids being taken.
400 tons, substation for New York Edison Co., W. Forty-second street, New York; bids closed July 3.
350 tons, plant addition for the Westinghouse Electric & Mfg. Co., Springfield, Mass., bids asked.
300 tons, mill building, Passaic, N. J., bids asked.
275 tons, bridge work, Norristown, Pa.; bids being taken.
250 tons, addition to navy yard foundry, Charlestown, Mass., bids in.
235 tons, building for the Citizens' Title & Trust Co., Uniontown, Pa.; order for the steel not yet placed by the Mellon-Stuart Co., Pittsburgh, general contractor.
200 tons, buildings for the Norfolk & Western railroad, bids asked.
200 tons, bridges for the Erie railroad, bids asked.
200 tons, Y. M. C. A. building, New Bedford, Mass., bids in.
200 tons, church, Newtonville, Mass., bids being taken.
175 tons, Bogachiel bridge, Ilympic forest reserve, Washington; June 26.
150 tons, building for Kent Normal school, Kent, O.; Barnes Construction Co., Logansport, Ind., low bidder.
150 tons, Nooksack bridge, Whatcom county, Washington; bids in; low bidder W. A. Byers, Spokane, Wash., $119,999.
100 tons, school, Winthrop, Mass., bids being taken.
Tonnage unstated, bridge of the Gods, across Columbia river, Vancouver, Wash., longest span 750 feet; project assured.
Tonnage unstated, 24-story hospital and hotel, Chicago; plans being drawn by Louis Guenzel, 879 North State street, Chicago, but project still in an indefinte state.
Tonnage unstated, 15-story hotel, Atlantic City; architects, Maynicke & Franke.

New Short Haul Rates On Steel Are Denied

Washington, July 1.—Schedules filed by the railroads last year proposing a general revision of short haul freight rates on steel from the Pittsburgh district to adjacent territory in Pennsylvania, New York, Ohio, West Virginia and Maryland have been held not to be justified by the interstate commerce commission. The roads have been given the right to file new schedules in conformity with the commission's view.

The proposed increases would have raised rates in the territory in question 50 or 60 per cent according to the steel companies. The railroads claim that the increases would be 15.8 per cent and would bring about a proper relationship with the through rates. Forty-two steel companies and other organizations protested against the schedule.

On the complaint of the American Shipbuilding Co. against the Baltimore & Ohio and other railroads, the commission held that the rates on steel to Pittsburgh from Cleveland, Lorain, Canton and Akron were unreasonable. Reparation was awarded to the extent that the rates exceeded the aggregate of the intermediate rates over these routes.

Car Buying Still Inactive

Missouri Pacific Defers Action On 3000—Retrenchment of Railroads Continues—Place Some Fastenings—New Extras on Track Spikes

RAILROAD TRACK MATERIAL PRICES, PAGE 5

New York, July 1.—The Missouri Pacific railroad has postponed the award of 3000 freight cars for several weeks. Car awards for June appear to have made little if any increase over those of the preceding month, which were the lightest in a long time. Current demand is slack. The American Locomotive Co. has been awarded one locomotive for the Chicago, Rock Island & Pacific, one for the Villazon Atocha railroad, South America, this order being placed through the Ulen Contracting Co., New York City, and two for the Colombian government, for the Ferrocarril del Pacific. The New York Central railroad today is opening bids on 15,000 to 22,000 kegs of spikes.

Baldwin Takes Mexican Cars

Philadelphia, July 1.—Considerable mystery surrounds the circumstances under which the Baldwin Locomotive Works is understood to have booked the past week an order for 3000 freight cars for Mexican railways. No announcement has been made where the cars will be built. The Baldwin works also has booked 10 locomotives for France.

The Baldwin plant has taken eight electric locomotives for Japan for which the electrical equipment will be supplied by the Westinghouse Electric & Mfg. Co.

Orders Continue Limited

Pittsburgh, July 1.—Limited orders mostly for single carloads continue to filter through to producers of billet-rolled light rails, mostly from the coal fields. The Carnegie Steel Co. and others are naming 2.00c and are quoting 1.90c base Pittsburgh, only when forced to do so by legitimate competition. Rail-steel light rails still are being sold $2 or $3 below the billet-rail price.

Track accessory orders are few and some independent producers refuse to quote below 2.90c, base Pittsburgh, on ordinary orders for standard track bolts although 2.80c base Pittsburgh, was named on 15,000 kegs wanted by the New York Central railroad. This figure is somewhat indicative of what may be done on large lots.

Effective today, a new list of extras on small spikes is being issued, which increases the revenue to makers somewhat. The previous list of extras are said not to have covered production cost in all cases. On small spikes 7/16-inch and smaller, 3.40c base Pittsburgh, is usually named although 3.25c is understood to be available in one direction. On ½-inch small spikes, 3.15c, base Pittsburgh, is the open market quotation. From 2.50c to 2.55c continues to be quoted on tie plates and 3.75c is the market on standard track bolts.

Track Fastenings More Active

Chicago, July 1.—A railroad in the St. Louis district has inquired for 10,000 kegs of spikes and bolts. Other inquiry totals 1600 pressed steel wheels, 1300 tons of angle bars and 10,000 kegs of spikes and bolts. The Rock Island railroad has specified comfortably against a rail and fastenings contract. The leading maker has taken 500 tons of rails for the Erie, Pa., street railway system. Freight car inquiry continues light and some car plants in the Chicago district are in need of work. Typical of retrenchment on the part of western roads is closing of the Santa Fe railroad shops for two weeks and the cessation of all buying in the meantime.

To Buy Street Cars

Cleveland, July 1.—The city council has authorized the purchase of 100 street cars by the Cleveland Railway Co.

CAR ORDERS PLACED

Central Railway of Brazil, six passenger cars, to the American Car & Foundry Co.
Danville & Mt. Morris, one passenger car, to the Edwards Railway Motor Car Co.
Denver & Rio Grande Western, 32 automobile cars, to the Pennsylvania Car Co.
Detroit-Edison Co., 20 hopper cars, to the Pressed Steel Car Co.; this is in addition to six gondolas reported in a recent issue as placed with this company.
Magnolia Petroleum Co., 50 tank cars, to the American Car & Foundry Co.
Nitrate Railways of Chile, 200 flats to the Metropolitan Carriage, Wagon & Finance Co., England.
Western Fruit Express, 1000 underframes to an unnamed builder.

CAR ORDERS PENDING

Carnegie Steel Co., 10 gondolas, pending.
Illinois Central, 130 motor cars and 130 trailers, pending.
International Railways of Central America, 36 box cars, pending.
Lehigh & New England, repairs to 300 hoppers; bids asked.
Philadelphia & Reading, 40 to 70 suburban coaches, 10 to 20 combination coaches and 10 baggage cars.
Reading Co., 60 to 80 miscellaneous coaches, bids asked.
Rio Grande Do Sol, Brazil, passenger cars, bids asked.
100 street cars, Cleveland Railway Co.; purchase authorized by city council.

Ore Shipments Larger

Cleveland, July 1.—Shipments of iron ore from the Lake Superior district in June, by water route, totaled 7,583,926 tons, compared with 6,583,815 tons in May. The amount shipped in June, 1923, was 9,499,501 tons. Shipments this season to July 1 total 14,827,128 tons compared with 16,185,482 tons in the period last year. The trade is quiet and small lots only are being sold. More ore carriers have been held in port, the number to have been taken off the run this season being approximately 70.

Ore Imports Keep Up

Philadelphia, July 1.—Imports of iron ore from French Africa, through the port of Philadelphia, were 12,770 tons. Manganese ore from Calcutta totaled 500 tons, chrome ore from Greece 1200 tons and from Portuguese Africa 5000 tons. Imports of beams from Belgium were 86 tons.

The Nonferrous Metals

Prices Stronger—Following Move in London—Trade Here Still Lagging—Europe Does Some Buying

	Copper—Electro delivered	Copper—Lake delivered	Spot tin Straits New York	†Lead New York basis	Zinc St. Louis basis	Spot† aluminum	Spot antimony	Spot nickel
June 25	12.37½	12.50	43.12½	7.00	5.75	26.50	8.25	28.00
June 26	12.37½	12.50	43.62½	7.00	5.75	26.50	8.25	28.00
June 27	12.50	12.62½	43.62½	7.00	5.75	26.50	8.37½	28.00
June 30	12.50	12.62½	44.00	7.00	5.77½	26.50	8.37½	28.00
July 1	12.50	12.62½	44.75	7.00	5.80	26.50	8.37½	28.00

†Outside market quotation.

NEW YORK, July 1.—The nonferrous metal markets the past few days showed a rather r tendency, following an upward movement in London, whereas the week previously America was following London downward. It has been so for weeks, this aimless backing and filling, with no real trend in any direction.

Copper softened a week ago to 12.37½c, delivered Connecticut points, 12.50c middle West, the lowest point excepting for a period in the summer of 1921, since 1914. At this level foreign consumers were interested and bid for substantial tonnages, which assisted the market, and domestic consumers came in on the rise. Electrolytic, lake and casting recovered ⅛ cent the past few days, making the electrolytic base 12.50c, Connecticut. No change in rolled and drawn products base prices has been made the past week. Operations of the rolling mills do not average over 50 per cent. The position of the wire mills is a little better than this rate, as the utility companies are continuing to buy, for summer construction.

Zinc has been somewhat firmer in tone, due to expectations of renewed European buying. Several hundred tons sold for export last week. Price of prime western has ranged between 5.75c and 5.80c, East St. Louis, with high grade quoted 8c to 8.25c, delivered.

The lead price of the American Smelting & Refining Co. has remained at 7.00c, New York, with independent and outside sellers in the East quoting the same figure. European prices are sufficiently high to attract any offerings at equivalents under 7.00c, New York.

Tin prices have been steady to strong, due to bull operations in London, despite continued light demand in this country. The metal exchange statistics showed a drop in American deliveries in June to 4310 tons, against an average for the year to date of about 6000 tons.

Antimony has held at 8.37½c to 8.50c, duty paid.

The aluminum market has remained slow, with resale virgin ingot 98 to 99 per cent offering in limited quantities at 26.50c, Detroit.

Mill Products

Base prices cents per pound, f.o.b. mill

SHEETS	
Copper, hot rolled, 4 oz., min..	19.50
High brass	16.25
Zinc, ga. 9 to 18 (plates ½c less)	9.50
Lead, full sheets (cut ¼c more)	10.75
Aluminum, bright, 0 to 35 gage..	37.50 to 92.00
SEAMLESS TUBES	
High brass	20.50
Copper	21.75
RODS	
High brass, round, ⅜ to 2½-inch	14.00
Naval brass rods	16.75
WIRE	
Copper	14.50 to 14.875
High brass	16.75

Old Metals

Dealers' buying prices cents per pound

HEAVY RED BRASS	
Cleveland	8.25 to 8.75
New York	7.50 to 7.75
Chicago	8.00 to 8.37
HEAVY YELLOW BRASS	
New York	5.75 to 6.00
Chicago	6.25
Cleveland	5.75 to 6.00
ZINC	
New York	3.25 to 3.50
Cleveland	3.00 to 3.25
Chicago, dross	4.25
HEAVY COPPER AND WIRE	
Cleveland	9.75 to 10.00
New York	9.50 to 10.00
Chicago	10.00
RED BRASS TURNINGS	
New York	7.00 to 8.00
Cleveland	7.50 to 7.75
Chicago	7.50 to 7.75
YELLOW BRASS TUBING	
Cleveland	6.50
NO. 1 BRASS ROD TURNINGS	
Cleveland	6.00 to 6.50
New York	6.00 to 6.50
Chicago	6.25 to 6.50
ALUMINUM BORINGS	
Cleveland	10.00

Secondary Metals

Casting copper, refinery	12.25
Remelt aluminum No. 12	20.50 to 21.50

Scrap Gaining Strength

(*Concluded from Page 6*)

is lagging. Readjustments have been made in all products and consumers levels have been reached. The same view has resulted in a speculative movement by dealers, who have considerably augmented their holdings.

Prices in several grades have responded to better demand and advanced 25c to $1 per ton. All desirable material is finding ready sale, and bidding on railroad offerings is more spirited. Cast grades have improved in tone, due chiefly to scattered buying and the purchase of a round tonnage by an elevator manufacturer. Rolling mill grades have failed to follow the general market, and are quiet, save for interest displayed speculatively by dealers.

Sales Are Scattered

Philadelphia, July 1.—Practically no market exists for iron and steel scrap and almost no tonnage is moving. A few scattered sales are being made, which are not significant.

Consumers Not Interested

Detroit, July 1.—Iron and steel scrap show a firmer tone on most grades. Most business is between dealers, consumers not desiring supplies around present prices.

Dealer competition for supplies has been strong. Producers have fairly large supplies on hand.

Most Buying Speculative

Cleveland, July 1.—Activity in iron and steel scrap in Cleveland territory is confined to speculative buying on the part of dealers. The latter are certain tonnage bought at present prices will prove profitable soon when demand is expected to reach important proportions. In consequence they are laying material down. On the other hand consumers, while in a mood to buy, are unwilling to pay the prices asked by dealers. Prices are unchanged from last week, except in a few instances, but are largely nominal.

Southern Market Quiet

Birmingham, June 30.—The iron and steel scrap market is quiet. With the exception of a little tonnage of No. 1 cast and stove plate, no old material is selling. Heavy melting steel still continues to be quoted at $11 with no orders. No cancellations on old contracts have been made and a little tonnage is moving constantly.

No Benzol Shading

Decreased Production Holding Prices—Other By-products Steady

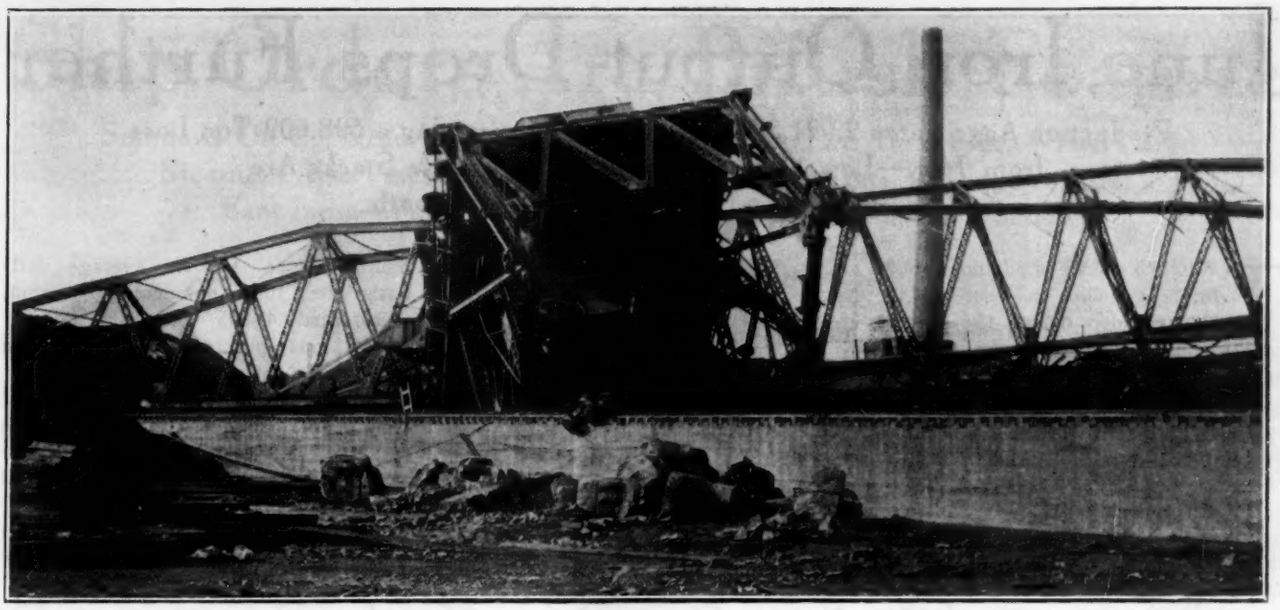
New York, July 1.—Notwithstanding relatively slack industrial demand and unsettled conditions in the motor fuel industry prices on light oil distillates are firmer. This appears to be due chiefly to continued curtailment of production. So far as can be learned there is now virtually no shading in any quarter. Until recently it has been possible to obtain concessions of 1 cent on bezol from some smaller sellers. During the past few days two large industrial users of benzol have been feeling out the market with a view to placing contracts for delivery over last half.

Pure benzol may be quoted at 25 cents works in tanks and 30 cents in drums; 90 per cent, 23 cents works in tanks and 28 cents in drums; xylol, 28 cents works in tanks and 33 cents in drums; toluol, 26 cents in tanks and 31 cents in drums; and solvent naphtha, 25 cents in tanks and 30 cents in drums.

The situation in sulphate of ammonia is unchanged with trading light and prices nominally $2.245 to $2.55 works, for domestic account, and $2.55 to $2.60 port, in double bags, for foreign shipment. Fertilizer manufacturers continue to show little interest. The fact that prices are as relatively steady is attributed in no small measure to the current low rate of production.

Mine School Head Killed

F. W. McNair, president of the Michigan School of Mines, Houghton, Mich., was killed, and John H. Dunlap, New York, secretary of the American Society of Civil Engineers, was injured, in a wreck on the Chicago, Burlington & Quincy railroad at Buda, Ill., June 30.



Iron ore bridge of the Baltimore & Ohio railroad, Lorain, O., one of those destroyed in the storm that swept the City June 28

Tornado Wrecks Ore Equipment

Destruction of Unloading Bridges at Lorain Interferes with Movement of Material—Plant of American Shipbuilding Co. Hit Hard by Gale—Industrial Works at Sandusky and Other Lake Cities Crippled

IRON ore handling facilities at Lorain, O., have been partially restored following the destruction of two unloading bridges by the great storm that struck the city June 28. The unloading of direct ore at the dock of the Baltimore & Ohio railroad on the lake front will be resumed in 15 days, while at the National & Tube Co.'s dock, five miles inland on the Black river, there is sufficient equipment intact to unload boats. The movement of vessels up the river awaited repairs to the municipal bridge, and the Nickel Plate railroad bridge. These bridges were expected to be in operation Tuesday. An operator at one of the ore bridges was killed, being numbered among the 72 who lost their lives.

The ore bridge of the Baltimore & Ohio railroad was overturned and battered into a twisted mass of steel. This was the only bridge at the dock, and there probably will be no more storing for the remainder of the season. Considerable damage was done to the other ore handling equipment at the dock, including the burning out of motors.

There has been three bridges at the plant of the National Tube Co. In the storm of June 20 one was thrown off the track and damaged. This leaves one ore bridge still in operation. The first bridge is being replaced on the track, while the second will have to be rebuilt.

The plant of the tube company was battered by the storm, but disregarding its own difficulties the company shut down the works and released 1000 men to assist the city authorities, the militia and relief organizations in searching for the dead, caring for the injured, clearin way debris and maintaining order. The plant resumed operations on Tuesday. Other industrial works nearby, including that of the Thew Automatic Shovel Co., escaped serious damage.

The toll of the two storms so far as iron and steel interests are concerned is mainly the damage or destruction of five ore bridges. As reported in IRON TRADE REVIEW last week, the bridge of Conneaut of the Pittsburgh & Conneaut Dock Co., subsidiary of the United States Steel Corp., was destroyed on June 20, and the bridge of the Ashtabula & Buffalo Dock Co., at Ashtabula, O., also was destroyed. The latter company is associated with Pickands, Mather & Co. There are other bridges at Conneaut and Ashtabula.

Buildings of the American Shipbuilding Co., in Lorain were swept over by the tornado, but much of the equipment is believed to be intact under the debris. The power house, plate shop, machine shop, pumping station and mold loft were among the buildings that were destroyed, while the boiler shop remained standing. It is estimated that it will cost $750,000 to repair the damage.

The new steamer HENRY FORD II that was being fitted out at the shipbuilding company's plant was blown with great force against the Nickel Plate railroad bridge. When the wind subsided the raging current in the river caught the vessel and carried it back against the dock. The boat was not greatly damaged. Two other cargo steamers at the company's dock were damaged by being driven against the bank. When the water subsided one was left standing 50 feet from the river's edge.

Damages amounting to at least several hundred thousand dollars were sustained from the tornado by industrial plants of Sandusky, Lorain and other northern Ohio cities. The worst consequences of this character were felt at Sandusky where the force of the storm fell directly upon the industrial section of the city. Buildings in many cases were completely demolished or badly wrecked and equipment damaged or destroyed. At Sandusky, plants of the Sandusky Tool Co., manufacturers of of garden tools, the Mack Iron & Wire Works, the Sandusky Washing Machine Co., the Kilbourne Cooperage Co., the Michel Cooperage Co. and the Grosch Coal Co. were badly wrecked. Other plants suffering lesser damage were the Ohio Motor Co. and the Dauch Tractor Co. The steel foundry of the Farrell Cheek Steel Foundry Co. was struck by lightning but escaped serious loss.

June Iron Output Drops Further

Production Aggregates 2,021,377 Gross Tons, Registering a 598,609-Ton Loss from May—Lowest since August, 1922—Active Stacks Are Reduced 27 to 160 on Last Day of Month

TWENTY-SEVEN additional blast furnaces added in June to the 82 suspended during the preceding two months brought the net loss in three months, or since March, 31, to a total of 109. On June 30 only 160 furnaces were operating, this being the lowest figure since August, 1922, when 143 were making iron. During the 3-month period just passed, production of coke and anthracite pig iron has dropped from 3,465,389 gross tons in March to 2,021,377 tons in June, or to a rate of but 24,600,000 tons per year. In May

MONTHLY PRODUCTION

	1924	1923	1922
January	3,015,480	3,228,226	1,645,804
February	3,073,619	2,993,918	1,630,180
March	3,465,389	3,523,595	2,035,908
April	3,226,107	3,546,308	2,070,161
May	2,619,986	3,868,486	2,309,348
June	2,021,377	3,667,868	2,362,455
Total 1st half	17,421,958	20,828,401	12,053,856
July		3,684,677	2,403,030
August		3,448,886	1,810,665
September		3,117,526	2,024,008
October		3,142,642	2,629,655
November		2,891,191	2,846,110
December		2,912,527	3,083,520
Total 2nd half		19,197,449	14,796,988
Grand total	17,421,958	40,025,850	26,850,844

the output was 2,619,986 tons, the drop of June being 598,609 tons. The loss of May from April was 606,121 tons. Pig iron production in June was the lowest since August, 1922, when the coal strike made a drop to 1,810,665 tons.

Production of iron for the first half of 1924 was 17,421,958 gross tons. Compared with the total of 20,828,401 tons in the first half of 1923, this year's figure shows a loss of 3,406,443 tons.

AVERAGE DAILY PRODUCTION

	1924	1923	1922	1921	1920
Jan.	97,273	104,136	53,090	77,895	97,172
Feb.	105,987	106,925	58,220	68,906	102,904
Mar.	111,787	113,664	65,674	51,447	108,895
April	107,537	118,210	69,005	39,691	91,754
May	84,515	124,790	74,495	39,202	96,510
June	67,379	122,262	78,748	35,466	101,553
July	.....	118,860	77,517	27,892	98,190
Aug.	.....	111,254	58,408	30,802	101,468
Sept.	.....	103,917	67,466	32,859	104,143
Oct.	.....	101,375	84,827	39,821	106,075
Nov.	.....	96,373	94,870	47,165	97,836
Dec.	.....	93,952	99,468	52,992	87,105
Ave.	95,725	109,659	73,563	45,223	99,456

However, it was a gain of 5,368,102 tons over the 1922 first half output of 12,053,856 tons.

During June pig iron was produced at the rate of 67,379 tons per day. This was a loss of 17,136 tons per day, or 20.3 per cent from the 84,515-ton daily output of May. The June rate was the lowest since August, 1922, when the average daily output was 58,408 tons. Since March, when iron was being made at the rate of 111,787 tons per day, production has dropped 44,408 tons, or 39.7 per cent.

Merchant pig iron made in June totaled 527,212 tons, which compared with the 648,656 tons of the preceding month, was a loss of 121,444 tons. Reduced to an average daily basis, the June output represented 17,574 tons per day. This was 3350 tons per day less than the 20,924-ton daily rate of May. Steelworks, or nonmerchant iron totaled 1,494,165 tons in June, this being a decline of 477,165 tons from the 1,971,330 tons of the month before. On an average daily basis the June nonmerchant output represented 49,805 tons per day, or 13,786 tons per day less than the 63,591 tons of May.

Stacks operating on June 30 totaled 160, a loss of 27 from the 187 active on May 31. During the month two merchant furnaces were blown in and 12 were blown out, the net loss being 10 stacks. Of the nonmerchant class, two were blown in aud 19 blown out or

DIVISIONS OF PRODUCTION

1923	Merchant	Non-merchant	Spiegel	Ferromanganese	Other ferro
Jan.	713,186	2,515,040	12,056	19,358	952
Feb.	708,901	2,285,017	3,657	21,410	759
Mar.	767,219	2,756,376	13,832	20,730	236
April	795,558	2,750,750	7,440	20,810	670
May	909,726	2,958,760	9,533	19,568	892
June	899,102	2,768,766	18,184	19,717	874
July	900,496	2,784,181	12,876	26,493	776
Aug.	828,163	2,620,723	5,595	22,044	1,800
Sept.	734,754	2,382,772	4,478	23,206	1,860
Oct.	724,596	2,418,046	8,442	16,039	1,858
Nov.	726,686	2,164,505	16,783	14,839	3,259
Dec.	740,624	2,171,903	10,272	18,236	1,717
Tot'l	9,449,011	30,576,839	123,148	242,450	15,653
1924					
Jan.	707,710	2,307,770	7,948	19,735	...
Feb.	679,700	2,393,919	9,870	22,262	...
Mar.	712,321	2,753,068	13,794	22,350	...
Apr.	708,151	2,517,956	4,240	23,580	163
May	648,656	1,971,330	9,336	21,663	763
June	527,212	1,494,165	9,405	20,714	779

banked, the net loss for this class being 17 stacks. Of the total stacks operating on June 30, 47 were merchant and 113 were nonmerchant. On June 30 the Steel corporation was operating 61 furnaces, as compared with 65 on May 31 and 91 on April 30.

Stacks blown in during June were: In Pennsylvania: One Clairton, Carnegie Steel Co.; Sharpsville, Allen S. Davison Co. In Illinois: Gary No. 3, Illinois Steel Co.; Granite City, St. Louis Coke & Iron Co.

Among the stacks blown out were: In Ohio: Globe, Globe Iron Co.; Steubenville, Wheeling Steel Corp.; Dover, M. A. Hanna Co.; Toledo B and United Pickands-Mather Co.; River No. 2, McKinney Steel Co. In Pennsylvania: Shenango No. 1, Shenango Furnace Co.; one Hokendauqua, Thomas Iron Co.; one Eliza and one Aliquippa, Jones & Laughlin Steel Corp.; Monessen No. 1, Pittsburgh Steel Co.; Cambria E, H, and J, Coatesville A and Bethlehem B, Bethlehem Steel Co.; Lochiel, E. E. Marshall. In New York: Susquehanna Nos. 3 and 4; Lackawanna H, Bethlehem Steel Co. In West Virginia: Top, Wheeling Steel Corp. In Alabama: One Vanderbilt, Woodward Iron Co.; Sheffield, Sloss-Sheffield Steel & Iron Co. In Illinois: Three South Works, Illinois Steel Co.; one South Chicago, Wisconsin Steel Co.; one Iroquois, Youngstown Sheet & Tube Co. In Indiana: Three Gary, Illinois Steel Co.

JUNE PIG IRON

	No. of stacks	No. in blast last day of month: June	May	Total tonnage made: Merchant	Nonmerchant	Total: June	May
Pennsylvania	144	58	67	107,874	566,535	674,409	888,320
Ohio	78	30	36	102,986	346,112	449,098	608,933
Alabama	42	23	25	111,127	105,640	216,767	247,203
Virginia	19	1	1	3,160	.....	3,160	7,437
New York	27	9	12	65,830	39,360	105,190	148,649
New Jersey	4	0	0	.....	.....	.....	.....
Illinois	26	8	12	58,373	82,339	140,712	199,308
Colorado	5	3	3				
Indiana	16	10	12	19,902	239,547	259,449	322,879
Maryland	6	3	3				
Wisconsin	6	1	1				
Kentucky	7	1	1				
West Virginia	5	3	4	11,016	64,164	75,180	82,012
Tennessee	14	3	3				
Utah	1	1	1				
Georgia	2	0	0				
Texas	1	0	0				
Minnesota	3	1	1	37,014	29,500	66,514	83,483
Michigan	4	4	4				
Missouri	1	1	1				
Spiegel and ferro—all states	..	..	..	9,930	20,968	30,898	31,762
Totals	411	160	187	527,212	1,494,165	2,021,377	2,619,986

Ship Orders Are British Feature

Standard Oil Co. Orders Two Tankers; Admiralty, Two Destroyers—Two Cargo Steamers Also Placed—Americans Bid on 57,000 Tons of Bridgework for East India—Ferromanganese Buying Light, Producers Worried

Iron Trade Review Staff Cable

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2-3 Caxton House, Westminster, S. W.1

LONDON, July 1.—The Standard Oil Co. is ordering two tankers from the British shipbuilders. The British admiralty has ordered one destroyer from John I. Thornycroft & Co., Ltd., and one from Yarrow & Co., Ltd. Cammel, Laird & Co. have booked two cargo steamers for the West Indian trade. Armstrong, Whitworth & Co. have taken 37 locomotives for India. American fabricators are bidding on 57,000 tons of bridgework for the East Indian railways.

A reduction in British coke prices has checked the rising tendency in pig iron. Spiegeleisen has been sold at £8 ($34.56) f.o.b. British producers of ferromanganese are worried by the smallness of American orders.

Paris reports that Lorraine furnaces are losing orders for pig iron to England. The markets generally are softer.

Current Needs Broaden British Steel Demand

European Staff Special

Office of IRON TRADE REVIEW,
Prince's Chambers, Corporation St.

BIRMINGHAM, Eng., June 20.—Some improvement is seen this week, inquiries and orders being a little more in evidence as consumers have kept back orders so long they must have small supplies for urgent requirements but confidence does not justify forward buying. Prices of No. 3 Cleveland iron have steadied at £4 10s ($19.48) and there is a little more continental inquiry which may develop if the franc makes a further improvement. A somewhat sinister figure in the board of trade reports is the item of 22,092 tons of basic iron imported during May, against 3723 for the corresponding month of last year. Importation of 14,933 tons of forge and foundry iron, about four times the quantity of May, 1923 is doubtless the remnant of the flood of business placed about three months ago.

The statistical record of production for May is not satisfactory, showing

Sterling—$4.33

a reduction of three furnaces, the total output of 650,900 tons being about 200,000 below the prewar average. Production of steel ingots and castings is a different story, the manufacture of 809,700 tons being the third highest during the last 12 months, and comparing with the prewar 1913 average of 638,600 tons.

Severity of foreign competition is emphasized by details of May imports just published. The climax was no doubt reached in May, owing to the working off of arrears by Belgian steelmakers. During the five months, England imported 224,651 tons of steel scrap against 72,046 for the same period last year, and 315,229 tons of steel billets compared with 177,513. In finished steel, iron bars and steel bars imports are about double what they were last year.

After a slight lull Belgian steel is once more pressing on the market at £6 17s 6d ($29.76) delivered for billets. Under this pressure British billets have cheapened to £7 10s ($32.47) as a minimum, sales being made at various prices up to £8 ($34.64). Buying is quiet at present, mainly because of the large accumulation in the stockyards as the result of recent foreign deliveries. The steelworks manage to keep going, but in nearly every case a quotation can be shaded.

It is possible to buy good coke at £1 2s 6d ($4.87) against the standard of £1 4s ($5.20). Some users able to do with a slightly lower grade have bought at £1 6d ($4.44). The position has changed in favor of the furnaceman in another direction also. During the time of scarcity and heavy exports, makers of inferior coke insisted on the full standard price charged for better qualities. This stage has now passed, and coke has to be sold on its merits, with proper regard for its value.

Cheaper pig iron would be a boon to

European Steel Delivered to World Ports

Gross Tons—Prices Last Reported

	U. S. A. North Atlantic Ports	U. S. A. Pacific Ports and Vancouver	Buenos Aires, Rio de Janiero, East Coast of South America	Valparaiso, West Coast of South America	Calcutta, Bombay and Indian Ports	Singapore and Straits Ports	South African, Australian, New Zealand Ports	Hongkong South China	Shanghai and North China	Japanese Ports
*Foundry No. 3 Pig Iron, Si. 2.50-3.00	$27.40	$23.25	$23.65	$25.80	$24.25	$27.50	$28.00	$28.00	$28.55	$28.00
*Hematite Pig Iron, Phos. 0.02-0.05	24.20	25.05	25.45	27.60	26.00	29.25	29.75	29.75	30.30	29.75
Standard rails	39.75	40.85	41.25	43.25	40.50	43.75	44.25	44.25	44.80	44.25
Merchant bars	1.51c	1.58c	1.56c	1.61c	1.49c	1.69c	1.71c	1.71c	1.73c	1.71c
Structural shapes	1.51c	1.58c	1.56c	1.61c	1.49c	1.69c	1.71c	1.71c	1.73c	1.71c
Plates, ship, bridge and tank	1.68c	1.75c	1.73c	1.78c	1.66c	1.86c	1.88c	1.88c	1.90c	1.88c
†Sheets, black, 24 gage	2.64c	2.76c	2.84c	2.79c	2.66c	2.86c	2.88c	2.88c	2.90c	2.88c
†Sheets, galvanized, 24 gage corr	3.61c	3.73c	2.81c	2.76c	2.63c	2.85c	2.85c	2.85c	2.87c	2.85c
Plain wire, base	2.46c	2.53c	2.51c	2.56c	2.44c	2.66c	2.66c	2.66c	2.68c	2.66c
Galvanized wire, base	2.84c	2.91c	2.89c	2.94c	2.82c	3.02c	3.04c	3.04c	3.06c	3.04c
Wire nails, base	3.10c	3.17c	3.15c	3.20c	3.08c	3.28c	3.30c	3.30c	3.32c	3.30c
†Tin plate, base box	$5.21	$5.25	$5.40	$5.35	$5.22	$5.36	$5.39	$5.39	$5.42	$5.39

The foregoing prices are for delivery by cargo liners in ordinary quantities 100 to 1000 tons, c.i.f. to port of destination, but *without* customs duties, unloading charges, dock dues, commissions, etc., at destination. Owing to lack of uniformity in ocean freight rates, cargo shipments by tramp steamers may show considerable variation from these quotations. Pig iron and rails quoted dollars per ton, finished steel in cents per pound, tin plate in dollars per box. Quotations are for *Continental* iron and basic-bessemer steel, except as indicated; for British material add $4.50 to $6.00 per ton.

†British material, basic open-hearth. *British, Middlesbrough.

Current Iron and Steel Prices of Europe

Prices Converted into Dollars at Rates of Exchange, June 30

	British Gross Tons U. K. Ports		*French* Metric Tons Channel Ports		*Belgian and Luxemburg* Metric Tons Channel Ports		*German* Metric Tons Rotterdam or North Sea Ports	
Export Prices f. o. b. Ship at Port of Despatch—By Cable	£ s d			Francs		Francs	£ s d	
PIG IRON								
Foundry No. 3, Silicon 2.50-3.00	$19.01	4 8 0*	$19.80	375	$18.42	400	$22.68	5 5 0
Basic	18.36	4 5 0	20.06	380	17.73	385	25.92	6 0 0
Basic-bessemer	21.06	4 17 6†	19.80	375	17.50	380	27.00	6 5 0
Hematite, Phosphorus 0.02-0.05	20.84	4 16 6	23.23	440	.....	....	24.84	5 15 0
SEMIFINISHED STEEL								
Billets	$30.24	7 0 0	$25.87	490	$25.79	560	$27.00	6 5 0
Wire rods	47.52	11 0 0	36.96	700	33.39	725	32.40	7 10 0
FINISHED STEEL								
Standard rails	$35.64	8 5 0	$31.68	600	$34.54	750	$30.24	7 0 0
Merchant bars	1.59c	8 15 0	1.34c	560	1.26c	605	1.32c	6 15 0
Structural shapes	1.44c	8 0 0	1.34c	560	2.24c	595	1.37c	7 0 0
Plates, ship, bridge and tank	1.74c	9 0 0	1.75c	730	1.55c	740	1.49c	7 12 6
Sheets, black, 24 gage	2.51c	13 0 0	2.75c	1,150	2.56c	1,225	2.84c	14 10 0
Sheets, galvanized, 24 gage, corrugated	3.42c	18 5 0	4.18c	1,750	5.01c	2,400	3.53c	18 0 0
Bands and strips	2.12c	11 0 0	1.97c	825	1.93c	925	2.25c	11 10 0
Plain wire, base	2.32c	12 0 0	2.27c	950	2.30c	1,100	1.96c	10 0 0
Galvanized wire, base	2.99c	15 10 0	3.11c	1,300	2.82c	1,350	3.33c	17 0 0
Wire nails, base	2.80c	14 10 0	2.63c	1,100	2.40c	1,150	2.74c	14 0 0
Tin plate, base box 108 pounds	$4.89	1 2 7½	.....	....	.....	....	$6.26	1 9 0

Domestic Prices at Works or Furnace—Last Reported								Renten Marks
Foundry No. 3 Pig Iron, Silicon 2.50—3.00	$19.44	4 10 0	$19.80	375(2)	$18.65	405	$22.72	99
Basic pig iron	19.44	4 10 0	20.33	385(1)	17.73	385	25.42	110.50
Furnace coke	4.97	1 3 0	7.92	150	8.75	190	7.36	32
Billets	30.24	7 0 0	24.82	470	25.79	560	27.60	112
Standard rails	1.59c	8 15 0	1.37c	575	1.57c	750	1.41c	135
Merchant bars	1.74c	9 0 0	1.37c	575	1.31c	625	1.36c	130
Shapes	1.74c	9 0 0	1.36c	570	1.28c	615	1.35c	129
Plates, ship, bridge and tank	1.83c	9 10 0	1.74c	730	1.57c	750	1.51c	145
Sheets, black, 24 gage	2.60c	13 10 0	2.75c	1,150	2.82c	1,350	2.56c	245
Sheets, galvanized 24 gage, corrugated	3.42c	17 15 0	4.18c	1,750	5.17c	2,475	4.90c	470
Plain wire	2.41c	12 10 0	2.39c	1,000	2.14c	1,025	1.88c	180
Bands and Strips	2.31c	12 0 0	1.97c	825	1.93c	925	1.77c	170

*Middlesbrough; †Scotch foundry iron; (1) Basic-bessemer; (2) Longwy. British export furnace coke £1 4s 0d ($5.18) f. o. b. Ferromanganese, £17 0s 0d ($73.44) f. o. b. The equivalent prices in American currency are in dollars per ton for pig iron, coke, semifinished steel and rails; finished steel is quoted in cents per pound and tin plate in dollars per box. British quotations are for basic open-hearth steel; French, Belgian, Luxemburg, and German are for basic-bessemer steel.

the Staffordshire iron trade, hopelessly handicapped at present in competition with steel, iron prices still remaining at or near £13 ($56.29) per ton. The only active department in South Staffordshire is in best bars, which still sell freely in spite of high price, exceptional quality giving makers a sort of monopoly.

The galvanized sheet trade continues to show steady business, one of the bright spots in the industry. The best evidence of its progress is the further recovery of prices, now at £18 ($77.94) to £18 10s ($80.10). Good foreign orders have been taken, placing the trade in a comfortable position. The black sheet trade is also slightly better, Scotch makers having booked excellent export lines especially in lighter gages.

The tin plate trade shows a decided improvement with a larger turnover and good orders from Japan and India, as well as other eastern markets. Some recovery in the price of tin has brought numerous consumers into the market. A number of manufacturers decline to sell below £1 3s ($4.68) per box for ordinary sizes. The reappearance of Japan, after buying largely from America, is believed to be connected with the ability of South Wales to give much more prompt shipment than was possible some time ago. Welsh makers believe they will now be able to recover whatever ground has been lost to America from slow deliveries.

Steel scrap is weaker, sales being impossible at a higher figure than £4 5s ($18.50) delivered in the Midlands, or £4 10s ($19.48) South Wales. In spite of the large use of scrap in the open hearth furnaces, steelmakers appear to be fairly provided with stock for current needs.

Japan Burdened by Over Supply of Steel

Foreign Special Service

TOKIO, Japan, June 6.—The Imperial Economic commission has taken up the question of preventing the iron and steel industry from further decay. A subcommission is appointed to conduct investigations into the conditions of furnaces and steel mills. Japanese furnaces and mills are exposed to competition from foreign stacks and mills and in spite of drastic curtailment of the cost of production can not gain any profit. Now that the government steel works is compelled to enter the market on the navy's curtailment of its building program it is quite certain they can not stand on feet any longer. Japanese furnaces' most active rivals at present are Chinese and Indian stacks. As consumption of pig iron in this country is now reduced heavily, no more than 5000 tons monthly in Tokio and vicinity, only part of the monthly shipments is absorbed. The output of Japanese furnaces is almost entirely left idle. As self-protective measure Japanese stacks have reduced prices to meet competition. But that is hardly an effective check on Indian importation, which continues to be sent at low prices.

The price is weak and uncertain both in the pig iron and the steel markets. In the former Japanese No. 1 is quoted at 61 yen ($24.70) per ton, No. 2 at 60 yen ($24.30) and No. 3 at 58 yen ($23.59). No. 1 Hanyang is quoted at 61 yen per ton ($24.70) while Indian pigs are quoted at 60 yen ($24.30) per ton. Cleveland is nominally quoted at 85 yen ($34.42) per ton. In the latter market round bars are quoted at 4.20 yen ($1.70) per 10 kwamme while flat and square bars are quoted at 4.60 yen ($1.86) per 10 kwamme. Plates are quoted at 4.50 yen ($1.82) per 10 kwamme. Sheets are quoted at 6.80 yen to 7 yen ($2.75 to $2.83) per 10 kwamme. Today's exchange is yen 40½ cents. Kwamme equals 8.2673 pounds.

Solves Tax Law Problems

Puzzling Points in Applying New Regulations Made Clear—Inventories, Canceled Contracts and Profits

BY H. ARCHIBALD HARRIS

DIFFICULTIES of applying the new tax law arise from changes in provisions of the former measure and it will require some time and much study to determine the course to pursue to meet the new situation. In the following questions from readers, some of the points of difference are reflected and in the answers the proper course to pursue is outlined.

Cancellation of War Contracts

Q. During the year 1919 *we finally settled certain claims which we had against the war department on account of cancellation of contracts for war materials which were furnished during the taxable year* 1918. *It is our understanding that any gain realized by reason of this cancellation should be reported as a part of the gain for the taxable year* 1918, *and we have prepared amended returns in this manner and paid the additional tax shown due. Please advise if this procedure is correct.*

A. The procedure which you have followed was required by Regulations 45 as originally issued. However, sometime after the issuance of this regulation it was amended and the present holding of the bureau of internal revenue is that such items of income should be accounted for as taxable income in the years in which they are received. If the amount paid by you in the taxable year 1918 in this instance has not been outlawed by the statute of limitations it is suggested you file a claim for refund and amend your 1918 and subsequent years' returns to show these items as income for the years in which they were received, subject to the tax rates prevailing during that period.

Inventories at Cost or Market

Q. In pricing our inventory as at Dec. 31, 1920, *we used the method of pricing at cost or market, whichever was lower. We found, however, that in pricing metal, the price used in the majority of cases was cost to us at the date we purchased the metal. This valuation was considerably higher than the market on Dec.* 31, 1920, *and we have been wondering if we may amend our returns and restate our inventories accordingly.*

A. If cost or market was used as a basis for preparing inventories for 1920 and subsequent years, and you made the error of pricing certain portions of inventory at cost which was higher than market, you may still amend your returns to reflect the reduced inventory valuation. We find that conditions such as you have described in your case occurred in connection with the valuation of inventories in a great many foundries as at Dec. 31, 1920. The market for metal declined materially at that time, and we have knowledge of numerous concerns that have been able to reduce their taxes for that year substantially by revising their inventories and pricing them at market wherever it was lower than cost. Permission was granted by the commissioner of internal revenue to all corporations to price their inventory as at Dec. 31, 1921 at cost or market, whichever was lower, regardless of what procedure they had followed in previous years, provided that if they adopted the new method they continued to use it on subsequent inventory dates, and it was not necessary to request permission.

Increase on Undistributed Profits

Q. We understand that under the revenue act of 1924 *a tax on undistributed profits has been levied equal to* 50 *per cent of the net income in certain cases. We are anxious to ascertain the conditions under which this tax is collected.*

A. The tax of 50 per cent on the undistributed profits of a corporation allowed to accumulate for the purpose of evading the surtax on the shareholders is levied by section 220 of the Revenue act of 1924. This tax is in lieu of a similar tax amounting to 25 per cent and included in the Revenue act of 1921. The provisions regarding its collection are very similar to the tax for previous years. It is collectible upon all income undistributed and retained in the surplus of the corporation primarily for the purpose of evading tax which would be collectible from the shareholders if such income were distributed as dividends. This tax does not apply in the case of a corporation which retains the surplus which is necessary or desirable for the operation of its business and distributes all amounts in excess of its needs. From the best information we can obtain there appears to be no case wherein this section of the law was used for the collection of taxes in previous years, and we are inclined to believe that very few companies will be subject to such an imposition under the Revenue act of 1924, with the possible exception of a few corporations organized as holding companies, or in some other manner wherein it is very evident that the primary purpose of the incorporaters was to eliminate the surtax payable by them upon income received.

Expert Will Answer

QUESTIONS arising under the new income tax law may be submitted to Tax Editor, IRON TRADE REVIEW, *and will be considered and reply furnished by Mr. Harris. This article is without cost to* IRON TRADE REVIEW *subscribers. A number of questions are answered on this page, smoothing out difficulties that have presented themselves because of the changes in the new law.*

Build Sintering Plants

Work is well under way at Buffalo on a sintering plant of 350 tons daily capacity for the Buffalo Sintering Corp., which will operate under a license from the American Ore Reclamation Co., Chicago. The plant, which should be in operation by the end of the year, is at the foot of Marilla street on ground acquired from the Donner Steel Co.

The United Alloy Steel Corp., Canton, O., has taken a license from the American Ore Reclamation Co., for the Dwight and Lloyd sintering process and will erect a sintering plant with capacity of 250 tons per day.

Imports and Exports Are Larger

May Receipts Markedly Over April and Largest in Ten Months—Growth Distributed Over Entire List—More Pig Iron Is Imported—Ferroalloy Exports Almost Disappear—Canada and South America Best Customers

CONTINUED increase in imports and exports of iron, steel and ores is marked by the record of May, which extended the growth shown in April. Total imports in May were 66,805 tons compared with 50,975 tons in April while exports were 168,172 tons, compared with 132,739 tons in April. Both figures are less than those of May 1923, though they are close to the figures of June last year.

Tin plate exports increased from 5924 tons in April to 21,981 in May and fabricated structural shapes from 843 to 1038 tons. The increase is fairly evenly distributed over most of the list, demand for American products apparently being increased in all lines.

Pig iron imports were increased from 17,171 tons in April to 25,220 tons in May. Ferromanganese and ferrosilicon fell off slightly and scrap imports dropped from 6900 tons in April to 1295 tons in May. Structural shapes increased, the April tonnage being

IMPORTS AND EXPORTS
Gross Tons

	1924 Imports	1924 Exports	1923 Imports	1923 Exports
Jan.	26,677	251,284	120,080	124,444
Feb.	42,054	168,191	67,707	135,182
March	39,279	124,762	106,206	165,624
April	50,975	132,739	77,909	179,159
May	66,805	168,172	75,891	204,988
June	.....	.....	68,019	172,747
July	.....	.....	53,448	170,259
Aug.	.....	.....	45,432	163,010
Sept.	.....	.....	36,612	173,664
Oct.	.....	.....	29,884	154,079
Nov.	.....	.....	26,534	186,770
Dec.	.....	.....	27,012	179,215
Totals	225,790	845,148	234,724	2,009,141

Year	Imports	Exports
1922	712,895	2,005,100
1921	135,825	2,150,276
1920	421,274	4,934,087
1919	322,264	4,397,295
1918	169,110	5,338,019
1917	330,201	6,465,053
1916	328,965	6,110,732
1915	282,396	3,532,564
1914	289,775	1,549,554
1913	317,260	2,745,635

ORIGIN OF FERROMANGANESE
Gross Tons

Manganese ore from:	
Russia-in-Europe	2,724
Turkey-in-Europe	14,396
Brazil	6,084
British India	3,633
British West Africa	5,156
Total	31,993
Ferromanganese from:	
France, including Luxemburg	7
Germany	234
Norway	1,974
England	2,995
Canada	20
Total	5,230

ORIGIN OF IRON ORE IMPORTS
Gross Tons

From:	May 1924	May 1923	Eleven months ending May, 1924	Eleven months ending May, 1923
Spain	7,550	64,676	112,286	136,858
Sweden	....	138,642	431,568	571,179
Canada	103	2,059	12,106	4,324
Cuba	30,572	55,712	517,318	572,300
French Africa	6,000	40,752	264,626	203,737
Other countries	107,451	61,951	864,482	490,173
Total	151,676	363,792	2,202,386	1,978,571

ORIGIN OF PIG IRON IMPORTS
Gross Tons

From:	
France, including Luxemburg	4,510
Belgium	696
Germany	2,844
England	5,720
Scotland	360
British India	5,046
China	200
Netherlands	5,844
Total	25,220

IRON AND STEEL EXPORTS
Gross Tons

	May 1924	May 1923	Eleven months ended May 1924	Eleven months ended May 1923
Pig iron	4,317	1,848	38,539	28,975
Scrap	12,017	3,809	95,991	35,266
Semifinished	3,810	12,603	77,364	103,058
Iron, steel bars and rods	1,086	4,036	35,575	*93,672
Sheet bars	.....	553	96	692
Steel bars	10,680	13,842	123,599	69,487
Alloy steel bars	106	210	2,802	**62,415
Iron bars	358	1,133	5,960	8,011
Boiler plate	554	578	10,340	6,230
Other plates	10,690	10,650	84,126	91,720
Galvanized sheets	10,051	12,771	88,934	102,087
Steel sheets, black	5,693	12,137	158,722	91,313
Iron sheets, black	1,358	1,420	10,837	10,439
Strip	1,137	1,850	9,419	9,181
Hoops, bands and scroll	2,208	2,435	25,843	26,347
Tin, terne plate	21,981	13,328	160,292	76,558
Structural shapes, plain	9,179	11,646	94,048	99,994
Structural shapes, fabricated	1,038	3,298	26,633	25,255
Ship and tank plates punched	1,559	367	4,057	2,365
Metal lath	226	150	1,806	470
Other structural forms	3,252	2,740	44,430	52,844
Rails over 50 pounds	8,374	26,459	212,162	186,047
Rails under 50 pounds	1,117	4,388	22,731	25,473
Rail joints, etc	1,006	3,959	22,041	20,185
Switches, frogs, etc	812	255	6,144	5,376
Railroad spikes	6,144	848	7,443	7,299
Railroad bolts, nuts, etc	155	200	2,321	2,128
Boiler tubes	1,197	1,231	14,537	12,988
Casing and oil line pipe	14,420	5,489	85,557	47,971
Welded black pipe	5,096	8,922	69,250	63,131
Welded galvanized pipe	2,455	2,019	28,884	27,579
Malleable iron pipe fittings	.....	632	4,475	6,547
Malleable iron screw pipe fittings	840	.....	4,495	.....
Cast iron pipe	.....	1,698	8,068	16,125
Cast iron pipe fittings	.....	1,333	6,502	10,332
Cast iron screw fittings	433	.....	3,046	.....
Cast iron pressure pipe fittings	1,042	.....	6,380	.....
Cast iron soil pipe fittings	481	.....	1,800	.....
Plain iron and steel wire	1,580	5,185	29,467	32,274
Galvanized wire	879	8,629	34,246	51,225
Barbed wire	6,101	8,427	62,750	71,292
Woven wire fencing	317	348	3,310	3,029
Wire cloth and screening	155	109	2,033	1,186
Wire rope and cable	357	598	4,259	5,311
Insulated wire and cable	67	55	1,180	1,097
Other wire	982	1,350	11,874	13,527
Cut nails	115	201	1,596	2,782
Wire nails	1,558	4,788	19,478	30,305
Horseshoe nails	68	115	862	962
Other nails	376	432	4,804	3,981
Bolts, nuts, rivets, etc	1,462	1,393	16,262	16,765
Horseshoes	56	61	867	943
Other iron and steel	5,594	5,086	58,753	60,702
Iron castings	672	506	8,789	9,052
Steel castings	823	947	5,372	2,763
Car wheels and axles	1,934	1,835	19,131	15,442
Iron and steel forgings	204	247	2,197	2,317
Total	168,172	209,189	1,892,919	1,752,415

* Jan 1 to May 31.
** July 1 to Dec. 31.

CASTINGS AND FORGING EXPORTS
Gross Tons

	May 1924	May 1923	Eleven months ended May 1924	Eleven months ended May 1923
Iron castings	672	506	8,789	9,053
Steel castings	823	947	5,372	2,763
Car wheels and axles	1,395	1,835	19,132	15,442
Iron and steel forgings	204	248	2,197	2,317
Total	3,094	3,536	35,490	29,575

FERROALLOY EXPORTS
Gross Tons

	May 1924	May 1923	Eleven months ended May 1924	Eleven months ended May 1923
Ferrosilicon, containing above 40 per cent	5	94	1,027	886
Ferromanganese and spiegeleisen	2	503	3,117	336
Tungsten, manganese and other ferroalloy ores	220	129	1,309	387
Ferrotungsten, tungsten metal and wire	1	...	2	1
Ferrovanadium	7	8	32	15
Other ferroalloys	11	...	109	195

DESTINATION OF EXPORTS MAY 1924
Gross Tons

	Rails	Galvanized sheets	Plates not fabricated	Tin plate	Steel sheets black	Barbed wire
Argentina	....	675	....	757	155	83
Australia	....	21	97	....	....	250
Brazil	1,693	455	....	279	68	1,698
British India	....	50	....	3,925	....	....
British South Africa	....	147	....	....	....	574
Canada	2,974	2,598	8,089	2,643	3,997	261
Chile	5	131	....	33	....	16
China	....	147	831	7,022	47	....
Colombia	1,278	377	....	....	....	749
Cuba	1,032	1,115	499	390	130	676
Central America	....	538	....	....	....	288
Dutch East Indies	....	74	....	....	....	....
Hong Kong	....	....	403	2,585	....	....
Honduras	15	....	....	....	....	....
Italy	....	....	....	394	....	....
Japan	318	627	....	1,144	978	....
Mexico	572	569	79	414	114	537
Norway	....	46	....	....	....	....
Peru	....	....	....	4	....	....
Philippine Islands	917	1,710	342	380	3	530
South America	....	....	38	....	....	....
Venezuela	....	....	....	31	....	137
United Kingdom	....	....	445	....	....	....
Uruguay	....	....	....	78	....	....
Other Europe	....	247	....	....	....	....
Other South America	....	215	....	....	25	....
Other Countries	687	309	269	1,502	177	303

2002. In May 4258 tons was brought in. Imports of rails were about the same for the two months.

The most marked decline in exports is apparent in ferroalloys, which dropped almost to the vanishing point. Ferromanganese and manganese ore imports show a shifting in points of origin. Russia in Europe appeared with 2724 tons of ore. Brazil doubled its ore tonnage, while British India fell to half its April imports. For the first time in history Norway appeared as an importer of ferromanganese sending in 1974 tons. Imports of this metal from England were only one half those of April.

More iron and steel products were exported to Canada than any other country, more rails, galvanized sheets and tin plate being taken, while plates, black sheets and barbed wire were taken less freely. Cuba, Brazil and other South American countries also absorbed important tonnages.

IMPORTS OF VARIOUS ORES AND FERROALLOYS

Gross Tons

	May,		Eleven months ending May,	
	1924	1923	1924	1923
Ferromanganese	4,996	8,651	59,559	102,314
Ferrosilicon	506	1,832	11,353	16,062
Manganese ore	31,993	12,734	260,960	270,572
Tungsten ore	.....	.....	.....	23,127
Nickel ore	551	474	5,540	4,511
Total	38,046	23,691	337,412	416,586

IRON AND STEEL IMPORTS

Gross Tons

	May,		Eleven months ended May,	
	1924	1923	1924	1923
Pig iron	25,220	39,764	159,017	†621,153
Ferromanganese	4,996	865	59,559	102,314
Ferrosilicon	506	1,832	11,353	16,062
Scrap	1,295	18,390	72,751	†214,732
Bar iron	248	827	5,057	9,630
Steel ingots bars, Structural shapes etc.	4,258 5,434	737 699	17,924 33,125	9,978 ‡24,782
Rails	4,222	2,946	29,830	†15,044
Boiler and other plates	45	1	2,940	†1,758
Sheets and saw plates	93	139	2,843	*984
Tin plate	142	543	1,445	9,859
Wire rope and insulated wire	8,375	1	9,186	*420
Wire rods	876	30	5,839	2,482
Total	55,710	66,774	410,869	1,029,198

OTHER IMPORTS

Gross Tons

Tubular products	9,914	440	28,277	*2,708
Round iron and steel wire	545	230	3,288	*2,331
Castings and forgings	237	357	2,541	*1,427
Nails and screws	155	128	587	*726
Bolts, nuts and rivets	42	43	186	165
Flat wire and strip steel	202	89	1,929	729
Total	66,805	68,061	447,677	1,037,284

*Beginning Sept. 22, 1922.
†Beginning July 1, 1922.
‡Including imports July 1 to Sept. 21, 1922.

More than $300,000,000 was paid in wages by industries in Allegheny county, Pa., in the first quarter of 1924. One-half of the amount was distributed in Pittsburgh. This was 17½ per cent more than in the first quarter of 1923.

Market Dull on Coast

Building Most Active Department, While Pig Iron and Steel Continue to Drag—Scrap in No Demand—Jobbers Find Less Demand

SEATTLE, June 25.—While business on the North Pacific is in the doldrums, there is a better tone. Building construction continues active while public improvement work is being conducted on a fairly large scale throughout the Northwest. Buying is on a limited scale, in view of existing uncertain conditions, dealers holding requirements to the minimum.

Shipments of manganese ore from the Fairholme mine through Port Angeles, Wash., have begun and this is expected to become a steady movement. Concentrates from Western Canada are being booked in increasing quantities through New Westminster, B. C., to Antwerp. These shipments began this month and already five vessels to carry 3000 tons each are engaged to load within the next six weeks.

Work began this week on the $1,000,000 unit of the Pacific Steamship Co., Seattle, the steel for which, involving about 700 tons, is now on the ground. These terminals mean a total outlay of $4,000,000 and will be the most complete on the Pacific coast, including several large piers as well as an office building to accommodate all departments.

New construction announced in Seattle this week includes a $200,000 shop and warehouse building for the Pacific Telephone & Telegraph Co., a large building for the Vance Lumber Co., to cost $100,000, in addition to a number of apartment buildings.

The Alaska road commission, among other improvements this season, plans a steel bridge on the Richardson highway and the reconstruction of an 87-mile narrow gage railroad in the Kougarok mining district. The Washington state highway commission this week opened bids on 10 road and bridge projects involving expenditure of about $700,000. The commission will receive bids July 22 for seven additional contracts, including a reinforced concrete T-beam bridge, 168 feet long, in Lincoln county and a 100-foot through concrete arch span bridge in Clallam county.

Los Angeles building operations for June are running slightly ahead of May. Up to and including the 17th permits numbered 2065, valuation, $5,899,916 compared with 2282, $5,477,300 for the same period May and 2849, $7,651,978 for the first 17 days of June last year. The year's total to June 17 was $74,436,112 compared with $86,466,717 same period 1923.

Pig Iron and Coke

Demand is limited as melters have sufficient material on hand for present requirements. The trend of the market is indicated by the weakness in the best grades of Scotch iron which have declined about 50 cents, being now quoted at $31.50 and $32.

Bars, Plates and Shapes

Reinforcing bars continue in fair demand, due to continued building activity. However, awards are in small tonnages and no activity features the market. Prices remain unchanged. No foreign inquiries have been received for some time. A. Guthrie & Co., Portland, received the contract for the foundation for the power house of Tacoma's Lake Cushman project on a bid of $118,425.

There is small demand for plates. No business of any moment is pending. During the week King Bros., Portland, received the award for the Whitestone Reclamation district, Loomis, Wash., involving 270 tons, on a bid of $34,077. Dealers report the best prices quoted on plates in this territory is 2.50c.

Fabricators are fairly busy. In the Seattle district three bridge contracts, involving 900 tons, are to be awarded during the next week, the largest being the Montlake bridge, Seattle, 560 tons. Structural awards of the week totaled 4150 tons, the largest being for 1100 tons for the Athens Athletic club, Oakland, to the Judson Mfg. Co. Subcontracts in connection with the office building for the Washington Iron Works, Seattle, have been awarded to the Bacon-Mathieson Forge Co., for the steel work and to the Novelty Iron & Wire Works, for structural steel. Price on shapes range between 2.60c and 2.70c.

Hoops and Bands

The hoop and band situation is about the same as the other steel markets. Demand is not brisk and tonnages consist mostly of small lots. While 2.65c, base Pittsburgh, represents the general run of the market, some mills have taken business at $1 to $2 per ton under this figure.

Old Materials

The iron and steel scrap market is in harmony with the general situation. Prices are weak and there is no incentive to accumulate stocks. The main buying interest states that it is purchasing all the steel scrap required at $9 per gross ton, about the same quantity being offered as when prices were $1 higher. There is little demand for No. 1 cast iron scrap. Many local foundries are using continental iron, purchased several months ago, so that the demand for cast iron is less than it ordinarily would be. Prices of this material range from $18 to $19.

IRON TRADE REVIEW
Registered U. S. Patent Office
The Authority of Industry National and International

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Published Every Thursday by
THE PENTON PUBLISHING CO., CLEVELAND, O.
Member, Audit Bureau of Circulation, Associated Business Papers, Inc., and National Publishers Association

BRANCH OFFICES
BOSTON - - - - - - - - - - 426 Old South Bldg.
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LONDON, ENG. - 2-3 Caxton House, Westminster, S. W. I.
PARIS, FRANCE - - - - - 23 Rue de la Bienfaisance
Cable Address IROTRAPEN, London, IROTRAPRI, Paris

Subscription, United States, Cuba and Mexico, $6 per year. Canada, $8.50 per year. Great Britain and other countries, £2:0:0 per year

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Basic Conditions Show Soundness

ADJOURNMENT of congress, enactment of tax legislation and final disposition of the soldiers' bonus have not withdrawn entirely from the business and industrial stage the element of uncertainty that has haunted it for several months. Not only politicians, but others who are looking forward to the coming national campaign and what it may bring, realize the uncertainty usually attending Presidential campaigns must be expected to have its effects on the business fabric of the country.

Despite forebodings expressed in some quarters concerning the lagging trade situation, Secretary of Commerce Hoover and Secretary of the Treasury Mellon, both astute observers of the national business trend, in recent opinions have expressed utmost confidence in the stability of fundamental conditions and the prospects of early quickening of trade. Returning a few days ago from a trip in the interests of the St. Lawrence waterway, Secretary Hoover informed President Coolidge of indications that the business situation generally throughout the United States is slightly improved and that the prospects are good for the immediate future. Recently Mr. Hoover stated that he believes the slackening of activity has been more psychological than real, pointing out that recent months have seen decided cuts into inventories and steady consumption in general lines which sooner or later must force increased demand for productive materials.

While no appreciable improvement has been noted from easier discount rates, Secretary Mellon, who has been closely following business conditions, is represented as feeling satisfaction on the soundness of fundamental conditions. It is believed by treasury officials that basic conditions in this country are so strong that the political situation cannot disturb them. Conditions in almost every country of Europe also are regarded as better and, with the Dawes plan in operation, the assumption is that further progress will be made.

Some measure of uncertainty due to the Presidential campaign is inevitable, many business observers feel, but this should not be allowed to become depressing. It is encouraging to believe that informed public opinion is a great safeguard of sane administration and conduct. While it seems paradoxical to many that a business depression should be psychological, nevertheless such situations have been known to exist. It is easier to point out how to relieve psychological depression than it is to apply the remedy but this also should not be regarded as a formidable task.

Prices Take New Alignment

THE iron and steel market considered as a unit now rests at approximately the same position that it occupied in December 1922. That date marked the low point reached by prices in the last quarter of the year from which began the movement that lifted the market steadily until the peak for 1923 was reached in April and May. The low point of 1923 followed in November at which time a revival with rising prices again appeared and came to an end in March. Hence the two markets of 1923 and 1924 have been almost identical in many respects. It needs to be pointed out, however, that the low point in 1923 which marked the turn for the 1924 rise was higher by $2 per ton or more on the average than that which preceded the advance in 1923.

These determinations of the general position of the iron and steel market at various stages of its expansion or contraction in the past two years are to be read from IRON TRADE REVIEW composite of fourteen leading iron and steel products.

This index stands today on substantially even terms with that of 18 months ago. However, as constituted today the composite shows an entirely different relationship between pig iron, semifinished and finished steel prices than it did in December 1922. Then pig iron was considerably higher and finished steel lower in virtually the same degree. Semifinished material has been little different on either occasion. Illustrative of this point, No. 2 foundry, Chicago, was $28 in December 1922. It is now at $20.50. Basic, Pittsburgh, was $26.76; it is now $20.76. Buffalo

No. 2X was $26.50; it is now $19.50. Pig iron generally is $6 or $7 per ton lower today than on the earlier occasion. The situation in finished steel is reversed. Plates today are selling $5 per ton higher; structural shapes and steel bars, $4 higher; black sheets, $5 higher; blue annealed sheets, $6 higher; galvanized sheets, $9 higher; wire nails, $4 higher; black pipe, $9 higher and tin plate $15 higher.

This comparison again sharply points the fact that steel prices have held their ground in the recurring movements of the market during the past two years much better than pig iron. This can be explained by an apparent overproduction of pig iron for the market notwithstanding steel production in the past 24 months has been greater than for any similar peacetime period in history.

Utilizing Technical Knowledge

GREAT masses of technical material, valuable data and serviceable information are accumulated each year through the efforts of various national societies. While much of this is collected through the more or less selfish efforts of individuals, the summation of new knowledge results in a movement for the public good.

A case in point is the activity of the American Society for Testing Materials, an organization made up of producers, consumers and independent representatives of the engineering profession. The work of this society has resulted in crystallizing the best thought on engineering materials and in advancing standards and specifications for them. Of the latter, according to the annual address of the president of the society, more than one-third are concerned with iron and steel.

Both manufacturers and consumers make use of the society's standards. Railroads, automotive interests and other large users purchase on A. S. T. M. specifications, but up to the present time few small interests avail themselves of the advantages which these limits offer as to quality. The advantages of buying by specifications are lost many times from inability to demand standard quality through limitations of small requirements and lack of desire to sell on rigid limits by reason of the small quantities offered.

The society plans to broaden the scope of its activities and the executive board has under advisement a means for inducing buyers to request, sellers to provide short designations for different grades of materials corresponding to various A. S. T. M. standards. Advantages of such a procedure may be summarized briefly as follows: Greater uniformity would be secured; all producers would sell on the same quality basis; sampling and testing would be available to the small users; more exact knowledge of materials would permit the use of lower grades for certain purposes; lower factors of safety might be provided; and buyers would be relieved of some of the burden of inspection and testing.

Against these advantages might be placed the factor of higher cost necessary to cover the inspection and testing by the seller. The market might be limited through unwillingness of some producers to comply with the standard designations or ignorance of the exact properties of the materials sold. The installation cost of the testing and grading service might be excessive.

These considerations probably will be weighed by both buyer and seller during the next few years. The final decision, after all, will rest with the buyer, for manufacturers always are ready to meet quality requirements where the demand from the consumer is sufficiently emphatic.

Grain Rise Improves Outlook

ONE of the year's most remarkable developments has been the sweeping and sustained advance of the entire structure of grain prices. From the low points of 1924, corn has advanced 29 cents a bushel to the best price since 1920, and wheat is up 16 cents a bushel to the highest level in more than a year. The major portion of this impressive movement has taken place within the last eight weeks. It was touched off by the government's report of the worst crop prospects this year in a dozen years, due partly to the weather and partly to reduced wheat acreage.

The advance of prices is accomplishing two important results in the agricultural sections. It is piercing the thick cloud of gloom and discontent which has enveloped the western grain belts for some years and it is equalizing agricultural and industrial conditions. The first result may have important political consequences, since it promises to sweep the ground from under the feet of demagogic prophets of malcontent. The second result is a constructive economic event of far-reaching significance.

Based on the bureau of labor statistics wholesale commodity index, farm and industrial products in 1913 had an even exchange. Under the stimulus of war demand for food in 1917, 1918 and 1919, farm products rose well above prices for industrial goods. In 1920 a gap of 12 points appeared in the indexes between the two levels, to the disadvantage of the farmer. In 1921 prices for farm products were 35 points under those for industrial goods. In 1922 the margin had been narrowed to 22 points. It was 18 points in 1923 and by May, 1924, it had contracted to 11 points. The trend is distinctly toward a restoration of the old prewar price balance. This is a constructive factor of great weight in the general trade outlook.

Current Statistics of Industry

Car & Foundry Head Sees Hope of Improvement

Current operations of the American Car & Foundry Co., are between 75 and 80 per cent but buying is at low ebb, according to a statement to stockholders by President W. H. Woodin. However, he anticipates more satisfactory conditions when the crops have progressed sufficiently to permit of their analysis.

The annual report for the company for the fiscal year ended April 30, shows net earnings of $6,304,000 compared with $6,213,000 in the previous year. Current assets at the end of the year amounted to $50,957,140 and current liabilities at $14,377,808, leaving net working capital of $36,579,332 against $36,633,890 one year before. The income account compares as follows:

	1924	1923
*Profit	$10,786,573	$10,633,562
Renewals, replace, etc...	4,481,606	4,419,951
Net income	$6,304,967	$6,213,611
Preferred dividends	2,100,000	2,100,000
Common dividends	3,600,000	3,600,000
Surplus	$604,967	$513,611
Previous surplus	36,673,499	36,159,888
Total surplus	$37,278,466	$36,673,499

*After federal taxes.

"During part of the year buying of new equipment by the railroads was fairly active but on a closely competitive basis," said Mr. Woodin. "The rebuilding and repairing of old equipment has been less in amount than might reasonably have been expected. Of buying for foreign delivery there has been but little. While labor and material costs are less than formerly, yet they are still high. All this combines to make the problem of securing an adequate profit one of some difficulty.

"As will be noted from the balance sheet at close of the year, as compared with the corresponding period of the preceding year, there was a decrease of more than $12,500,000 in inventories, an increase of more than $8,500,000 in cash and United States securities owned, and a decrease of more than $6,250,000 in accounts payable.

"Increase in property and plant account is accounted for by purchase during the year of real estate at Chicago needed for purposes of company's plant there.

"With the close of the congressional session the railroads are relieved, for a time at least, of fear of legislation adversely affecting their interests.

"Such fear of adverse legislation and delay in enacting constructive legislation, coupled with unsettlement of business conditions generally to be expected in a presidential year, undoubtedly account in some degree for falling-off in equipment buying which became noticeable as the company's fiscal year drew to a close."

Iron and Steel Output in Canada Increased

Toronto, Ont., June 30.—Production of pig iron in Canada totaled 84,987 long tons in May, an increase of 1112 tons over the April output. Basic iron output advanced to 69,229 tons, an increase of 6 per cent, while that of foundry iron dropped to 10,248 tons, a decrease of 35 per cent. Production for the five months ending with May was 370,142 tons, the highest recorded for this period in the last three years.

The production of steel ingots and castings during May totaled 108,433 tons, an increase of 4 per cent over the April output, being the largest tonnage for any month since October, 1920. Steel ingots produced for the further use of the reporting firms rose to 105,113 tons, an increase of 5 per cent. Output of steel castings fell 13 per cent to 3320 tons, 92 per cent of which was produced for sale. Total production for the five months ending with May was 419,819 tons of which 96 per cent was for the use of the works reporting.

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Produce More Crucibles

With 13 plants producing graphite and clay crucibles, compared with 17 in 1921, the value of such products in 1923 was $3,467,816, compared with $1,969,930 in 1921, an increase of 76 per cent. This total for 1923 was composed of graphite crucibles valued at $2,312,739, clay crucibles and glasshouse pots $631,464 and other products, such as fire brick, common brick, tile, refractory cements, $523,613. Of the 17 plants operating in 1921, one is idle, two have gone out of business and one has been transferred to another classification because of a change in product. Figures gathered by the department of commerce contain this information, which is subject to later revision.

Steel Barrels in Demand

Demand for steel barrels is greater than makers can supply, according to figures gathered by the United States department of commerce. Reports from 29 makers show production of 418,381 barrels in May, with shipment of 427,941 and a reserve of 44,011 at the end of the month. Unfilled orders called for 582,022 barrels. In April production was 416,628 shipments 420,129, with a reserve of 53,571 and unfilled orders for 614,102.

Canadian Ore Output in 1923, 30,759 Tons

Ottawa, Ont., June 30.—Total shipments of iron ore from Canadian mines in 1923 amounted to 30,759 short tons, the net value of which was reported at $114,944, as against 17,759 short tons shipped in 1922, valued at $56,993, according to revised figures of the dominion bureau of statistics. The output included 30,447 tons of beneficiated magnetite from Ontario, 5358 tons of which was exported. Total exports amounted to 5670 tons valued at $20,279.

Pig iron derived from Canadian ores smelted in Canadian blast furnaces during the year totaled 20,739 short tons, which at the year's average price for pig iron of $20.84 had a computed value of $432,298. No iron ores were mined in Nova Scotia during the year, but the British Empire Steel Corp., continued to operate iron mines at Wabana, Newfoundland.

The Business Trend

July 3, 1924

BY JOHN W. HILL, FINANCIAL EDITOR

THE swings and movements of a minor business cycle were crowded into the first half of 1924. Early in the year production climbed to great heights. Then followed a momentous decline.

The recession was due to a number of causes. Political unsettlement was an influence, but not a determining one.

The year opened with goods shortages made up and the construction deficit less pronounced. Current buying and demand were insufficient to maintain the country's extended plant capacity at a fever pitch of activity.

Greatest stimulus for the upward swing of production early in the year came from these factors—building, railroad equipment buying and automobile production. Each has now subsided.

Favorable Factors Shown

What is the outlook for the last six months? Outstanding favorable considerations are five in number. They are: (1) easy money; (2) reduced outputs; (3) rising farm prices; (4) lower industrial prices; and (5) brighter European prospects.

On the adverse side are these factors: (1) high inventories in some lines; (2) over-expanded plant capacities for numerous industries; (3) declining employment and spending power and (4) campaign unsettlement.

The enormous relaxation of credit is of prime importance. It precludes distress conditions. It should shorten the reaction and stimulate recovery when other conditions are more favorable. It has already caused an advance in the security markets.

Outputs Are Cut

If recent declines in trade came from excessive outputs, that cause is being corrected by deep curtailment. As a result production is below consumption in some lines. This is bringing a better balance between supply and demand.

Perhaps the most fundamentally encouraging development has been the remarkable advance of grain prices. This is doing two things. It is soothing farmers' political discontent, and it is mending his broken purchasing power. The distorted balance between rural and urban prices is being restored, an event long regarded as essential to prosperity.

In sum, the prospect is for continued dullness throughout the summer, with some measurable degree of recovery in the autumn. Automobile output, railroad buying and new building may be smaller in the last half. Business, however, should derive impetus from other forces.

The Barometer of Business

Weekly Comparison

	Last week	Week before	One mo. ago	One year ago	1913
Business failures..	340	409	387	335	...
Cash ratio Fed. Res. System %	82.8	82.1	82.7	76.9	...
Loan rate, 4-6 mos. N. Y. % ..	3-3¼	3¼-4	4-4¼	5	5¼-6
Aver. 25 industrial shares	$111.30	$110.06	$105.51	$107.10	$58.19
Aver. 25 railroad shares	$66.34	$65.35	$62.45	$63.52	$82.91
Aver. 40 bonds..	$80.70	$80.35	$78.65	$77.60	$93.00
Car loadings, week ended June 14..	902,710	910,707	914,040	1,008,838	*916,736
cities (000 omitted)	$9,378,495	$10,813,443	$9,103,596	$9,405,823	.....

*1920

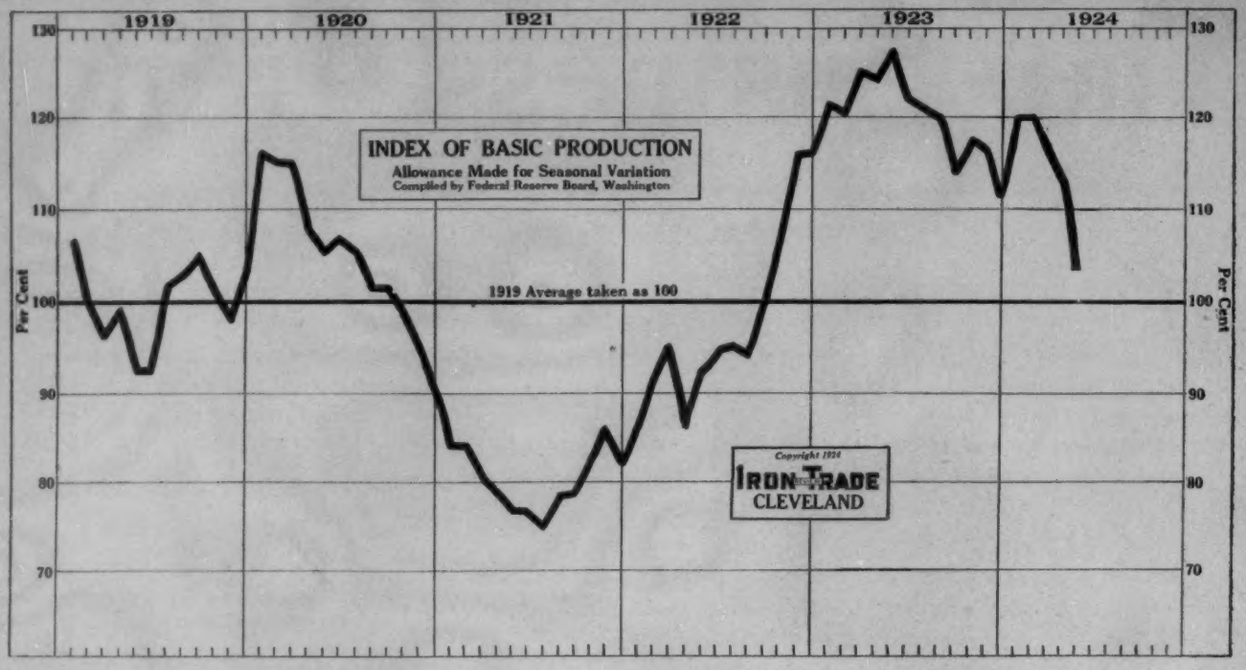
Foreign Exchange (Demand)

	Normal	Last week close	One week before	One month ago	One year ago
Sterling	$4.86	$4.32	$4.33	$4.36	$4.58
Francs	19.3c	5.29c	5.41c	5.72c	6.04c
Lira	19.3c	4.32c	4.32c	4.44c	4.40c

Monthly Comparison

	May	One Month before	One Year ago	1913 Mo. average
Dodge Building awards in 27 states (sq. ft.)	57,708,800	63,347,400	60,844,300	31,250,000
Business failures: Number	1,816	1,707	1,530	1,336
Liabilities ..	$36,590,907	$48,904,452	$41,022,277	$22,732,000
Exports	$336,000,000	$348,000,000	$316,359,000	$233,195,000
Excess of gold imports	$40,480,000	$44,027,000	$45,331,751	†$630,716
Bureau of labor price index ..	147	148	156	100
Bradstreet's price index	133	135.8	144.8	100
Economist's British price index	166.6	170.6	161.5	100
Nat'l Industrial Con. board living cost index	161.4	161.8	160.3	$100
New incorporations	$519,897,000	$528,900,000	$817,230,000	$49,301,000
Railroad net earnings	*$61,821,900	$80,239,885	$83,515,300	$59,301,000

†Excess of gold exports. ‡July, 1914. *April.

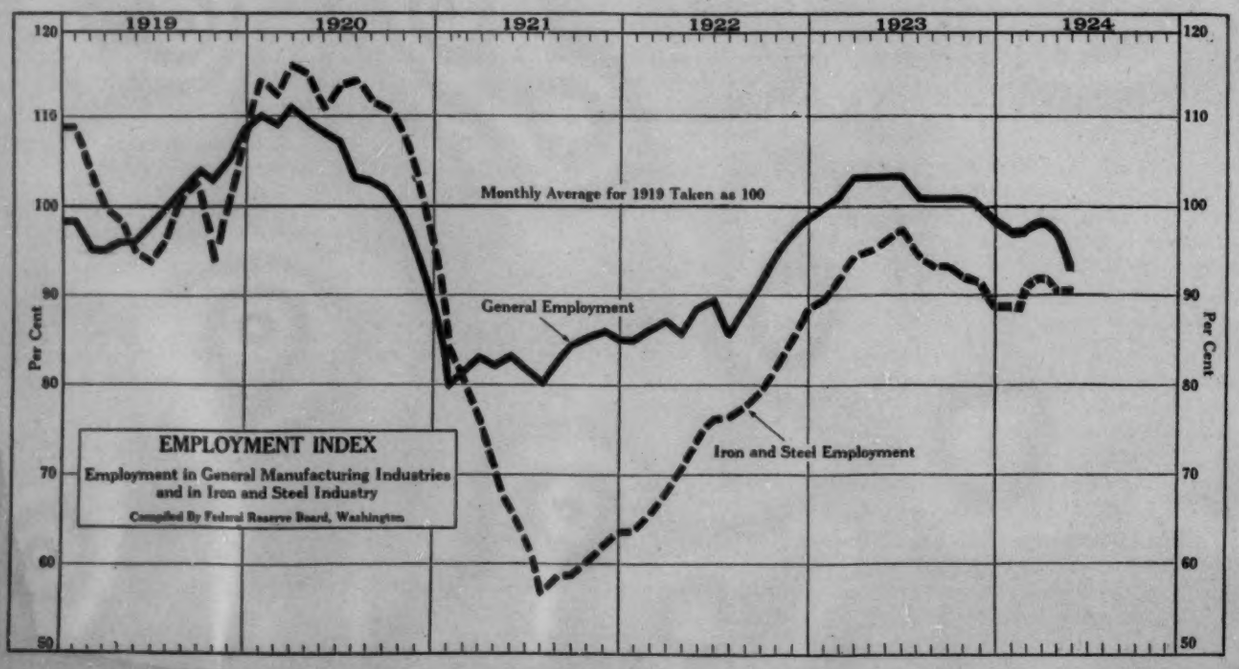


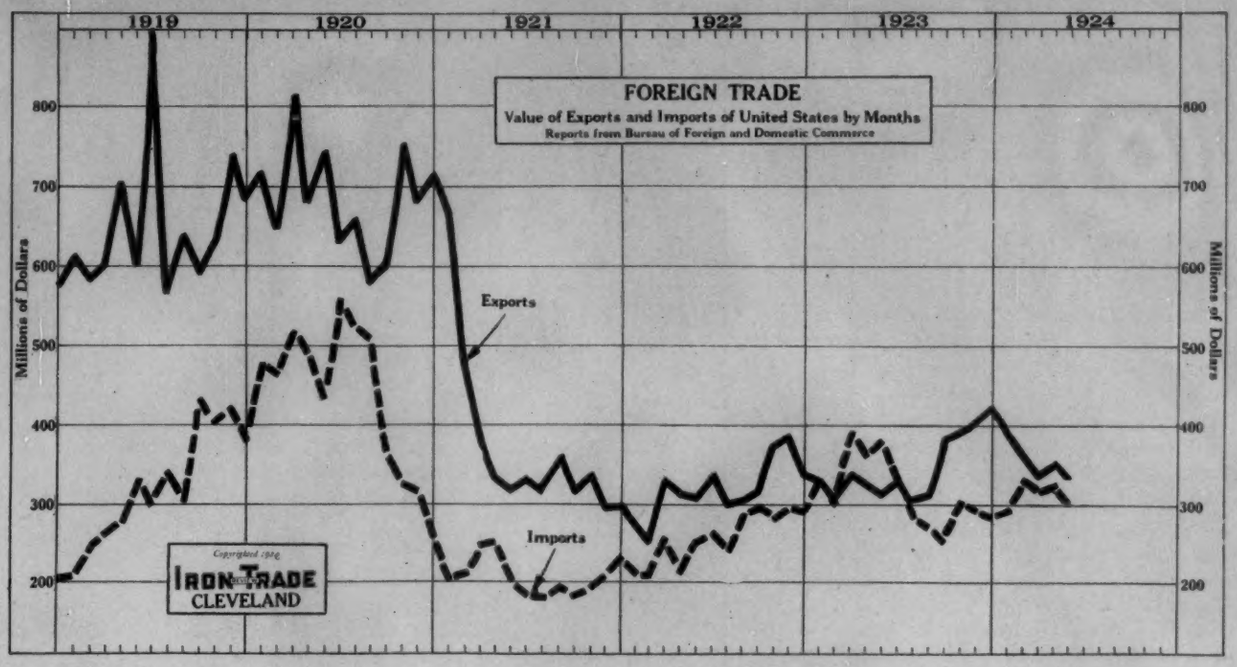
Basic Production

THE production of basic industries as computed by the federal reserve board, dropped 10 points in May. This was the widest decline ever made in any month since the index was started in 1913. At 4 per cent above the 1919 monthly average the May number was 18 per cent below the peak attained in May, 1923. The index is adjusted for seasonal variation. Particularly marked decreases were shown for production of iron and steel and mill consumption of cotton. Anthracite coal, cement and tobacco were higher.

Employment Index

FACTORY employment, as computed by the federal reserve board at Washington, declined 4 per cent in May. Compared with the peak of employment in 1923 there has been a shrinkage in payrolls of 9 per cent. At 93 per cent of the 1919 monthly average employment in May was at the lowest ebb since late in 1922. The number of workers in iron and steel mills held even in May. It stands at 90 per cent of the 1919 average the same as in April. This is 8 per cent less than the high mark for 1923.



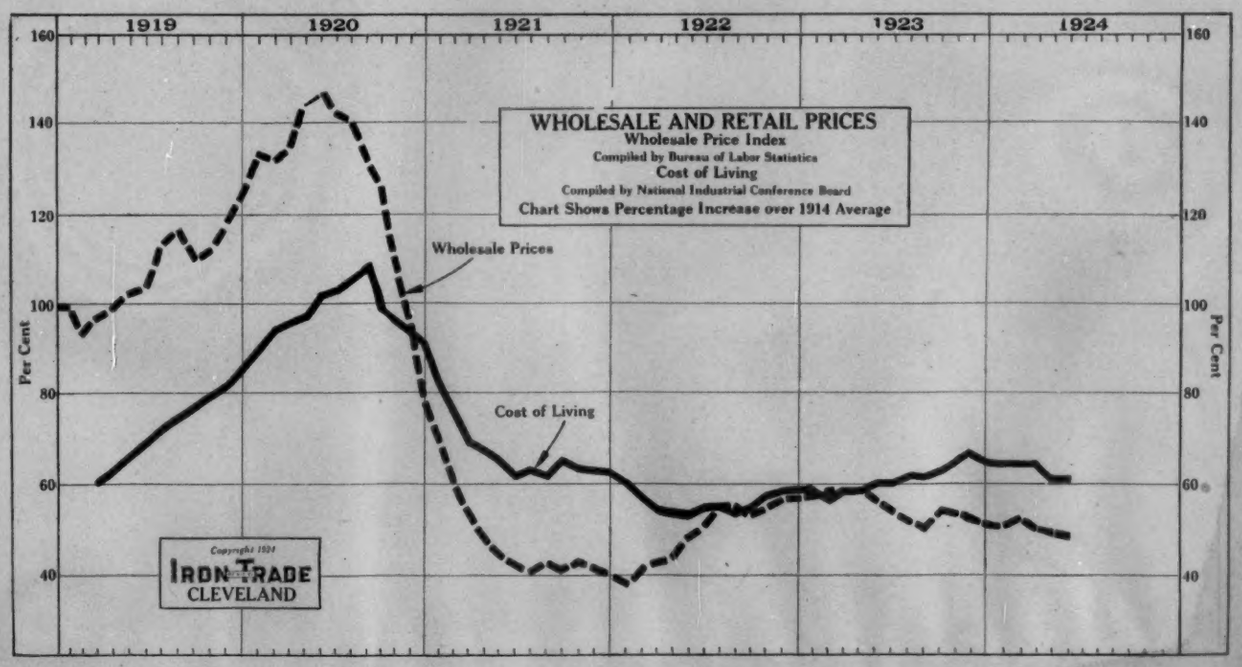


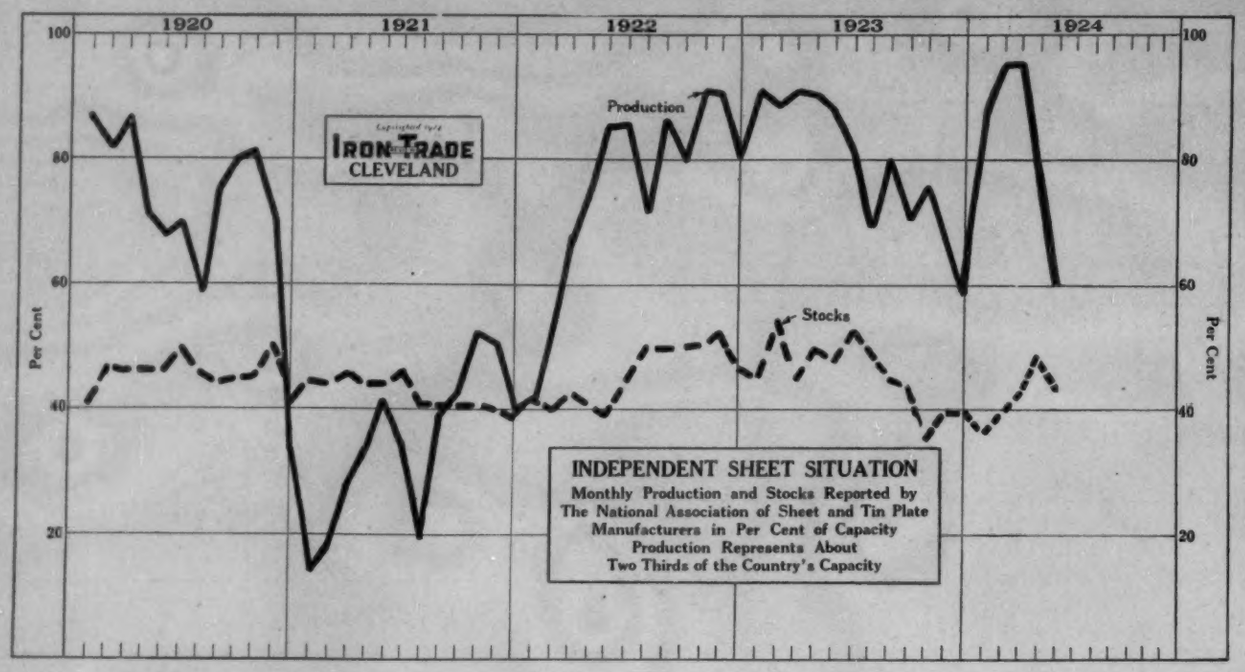
Foreign Trade

AMERICAN exports in May resumed their declining tendency. The total of $336,000,000 compares with $346,858,000 in the preceding month. Imports of May of $305,000,000 compared with $324,427,000 in April and $372,000,000 12 months ago. In 11 months of the fiscal year the surplus of exports was $723,563,000 compared with only $176,051,000 in the corresponding period of 1923. Smaller imports this year reflects the lessened industrial activities and reduced imports of raw material.

Wholesale and Retail Prices

IN MAY the wholesale dollar was worth 68 cents and the retail dollar was worth 62 cents, on the prewar basis. One year ago both were at the same level of 64 cents. During 1923 the cost of living advanced while wholesale prices tended lower. The latter turned upward for a brief time early in 1924 but is now declining. In May it stood at 147 per cent of the 1913 average. The cost of living index has been falling since December. The most important price development has been the strength of farm products.



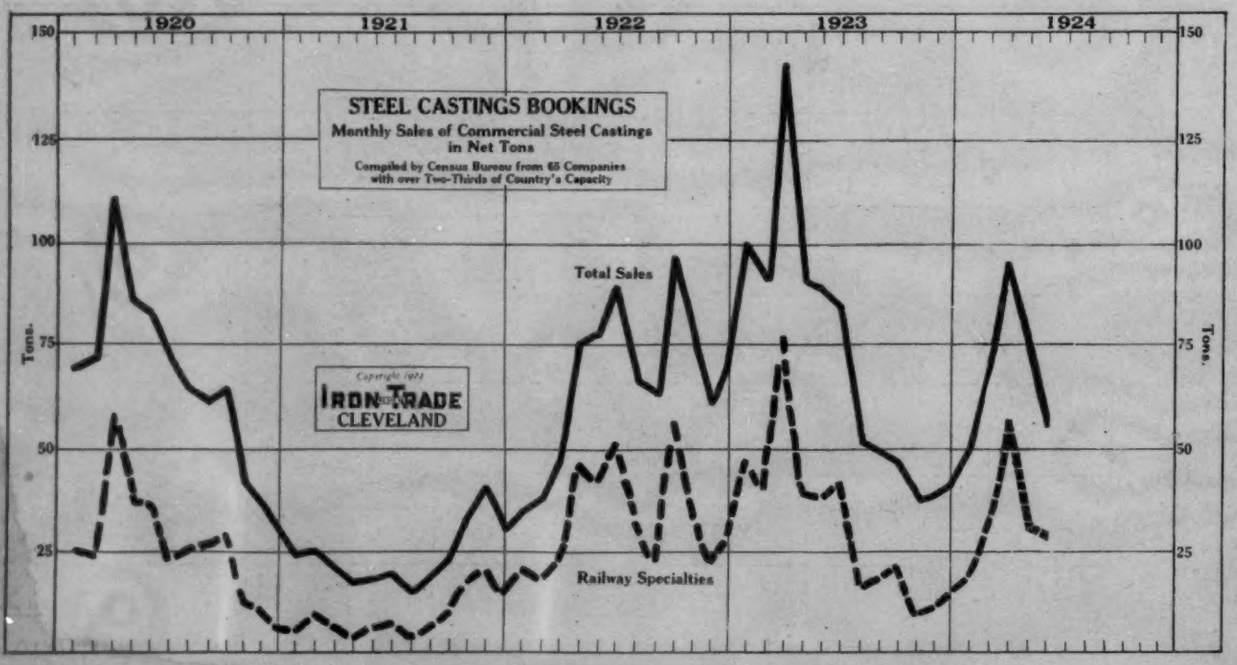


Sheet Situation

SALES and production of sheets in May declined approximately 20 per cent from April, according to data compiled by the National Association of Sheet and Tin Plate Manufacturers. A healthy development is seen in the reduction of stocks. Production in May of 176,582 tons was 59.6 per cent of capacity compared with 234,000 tons or 79 per cent of capacity in April, and 260,006 tons, or 89 per cent of capacity in May, 1923. Sales in May amounted to 43 per cent of capacity against 62 per cent in April. Stocks declined 6 per cent.

Steel Castings Sales

SALES of steel castings are following the general downward tendency. In May total sales fell to the lowest point since last January. The figure was 55,837 net tons, against 76,176 tons in April and 89,493 tons in May, 1923. Sales during the month amounted to 55.4 per cent of capacity against 82 per cent in April. A slump in miscellaneous demand was mainly responsible for the decline. In April miscellaneous sales of 27,803 tons were 39 per cent below those for April. Sales of railroad castings dropped only 7 per cent in May.



Operates New Malleable Foundry

Plant of Wisconsin Manufacturer Embodies Most Advanced Practice in Malleable Iron Casting—Capacity Is Double That of Former Foundry—Handling Equipment Is a Feature

BY E. C. BOEHRINGER

COREROOM light, airy and clean enough to be a candy factory; molding floors with benches removed from drafty windows and sand-drying heat, hard and soft iron tumbling mills mounted upon platforms to wrest a maximum of utility from cranes and gravity; a continuous annealing oven 347 feet long; ventilation and lighting so adapted that neither shadows nor enervating gases or heat are encountered—these features characterize the new plant of the Belle City Malleable Iron Co., Racine, Wis.

Unusual difficulties confronted the owners and engineers when this foundry first was projected. One problem was to dismantle a plant spread over two city blocks and construct new units, laid out and equipped to promote the economical production of quality castings, having double the capacity of the old plant, without complete cessation of operations during the construction period.

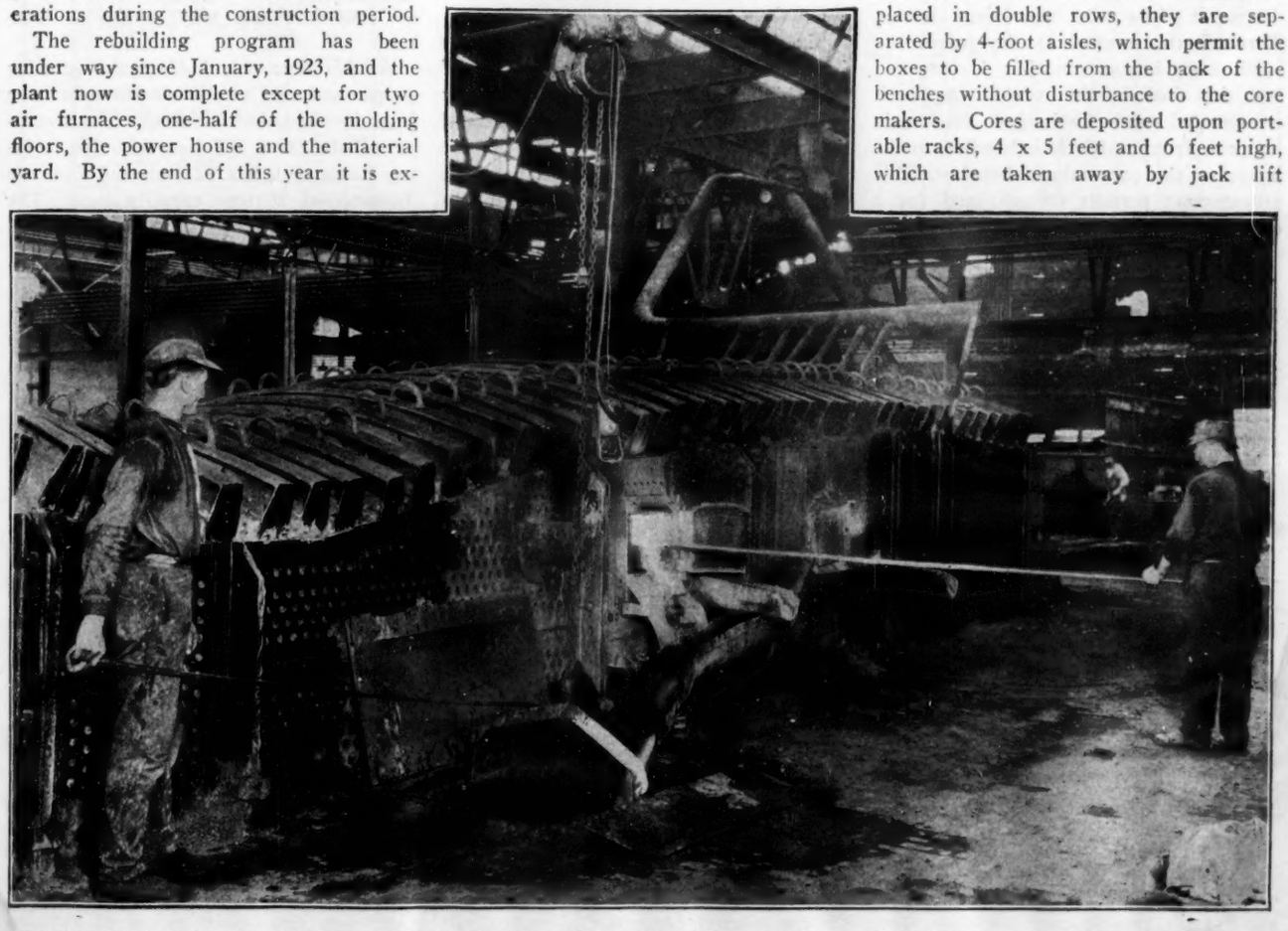
The rebuilding program has been under way since January, 1923, and the plant now is complete except for two air furnaces, one-half of the molding floors, the power house and the material yard. By the end of this year it is expected the proposed ultimate capacity—20,000 tons of malleable castings annually—will be available.

The author is editorial representative at Chicago of IRON TRADE REVIEW.

The products of the Belle City company cover the range of malleable iron castings and normally run one-third each of automobile, railroad, and farm implement and tractor parts. The assertion of the Belle City company and the engineers, A. A. Wickland & Co., Inc., Chicago, that the new plant embodies the most advanced development in malleable practice is one from which visiting foundrymen—and there have been many—do not differ.

Rarely in any manufacturing establishment is there found a room so light and spacious as the coreroom of the Belle City plant. A flood of light pours in through the monitor-type roof. On two sides of the room are windows. Directly in front of the double-ended ovens and dropping from the roof to within 8 feet of the floor is an ⅛-inch asbestos board partition, sprayed a spotless white. This reflects the light flooding in from the roof and gives the effect of outside light. Effective as a light source, this partition is of even greater value in acting as a barrier to the heat and gases from the ovens.

In the coreroom as well as in the foundry, the benches, 60 of which are in use, are removed from the windows, thus overcoming the discomfort arising from drafts and or proximity to heating coils. The benches are steel, with wood tops, and with the sand boxes in front of the core makers. Where the benches are placed in double rows, they are separated by 4-foot aisles, which permit the boxes to be filled from the back of the benches without disturbance to the core makers. Cores are deposited upon portable racks, 4 x 5 feet and 6 feet high, which are taken away by jack lift



SLAG FLOWS FROM THE SPOUT INTO A CROSS TROUGH WHERE A 2½-INCH STREAM OF WATER WASHES IT INTO A PERFORATED BUCKET IN THE FLOOR

HARD IRON CASTINGS ARE DELIVERED TO THE TUMBLERS BY WOOD-LINED, CRANE-CARRIED DUMP BOXES. EIGHT MILLS DISCHARGE ON THE LOWER FLOOR LEVEL. TWO MEN HANDLE THE ENTIRE BATTERY

trucks for transfer to the core ovens.

Two steel elevating towers with a revolving screen, a hopper and a sand mixer between them prepare the core sand. Sand is shoveled into the hopper of one elevator, which hoists it and drops it into the revolving screen. Through the meshes of the screen the sand drops into a steel bin, is tempered and deposited in the mixer. Again it is elevated and discharged into twin hoppers, from which it is handled to the boxes on the coremakers' benches. This arrangement permits enough sand for a day's requirements to be prepared in two hours. In addition to the 60 benches, the coreroom equipment includes one core machine and two roll-over machines. Core driers are stored on special racks above the locker, rest and toilet rooms that have been provided for the women coremakers.

Six brick, double-ended ovens whose inside dimensions are 6 x 14 feet, 7 feet high provide ample capacity for baking the cores. The double-ended design moves the work in a straight line and the oven gases and heat escape nearly 20 feet back from the asbestos board partition. The ovens are fired individually with gas, with the firing pits below the floor level, making possible a flush floor without gratings. A stairway is provided at both ends of the battery for egress in case of accident. Provision has been made for the use of fuel oil instead of gas when conditions warrant.

At this time only half of the foundry proper and two of the air furnaces have been installed, but eventually the foundry will be 230 x 378 feet, with 200 molding floors each 9 x 32 feet, and four air furnaces of 20 tons capacity each. The two furnaces not yet installed each will

MOLDING BENCHES ARE PLACED BACK TO BACK DOWN THE CENTER OF THE FOUNDRY. AISLES, 10-FEET WIDE, ARE PROVIDED

be equipped with 450-horsepower waste heat boilers.

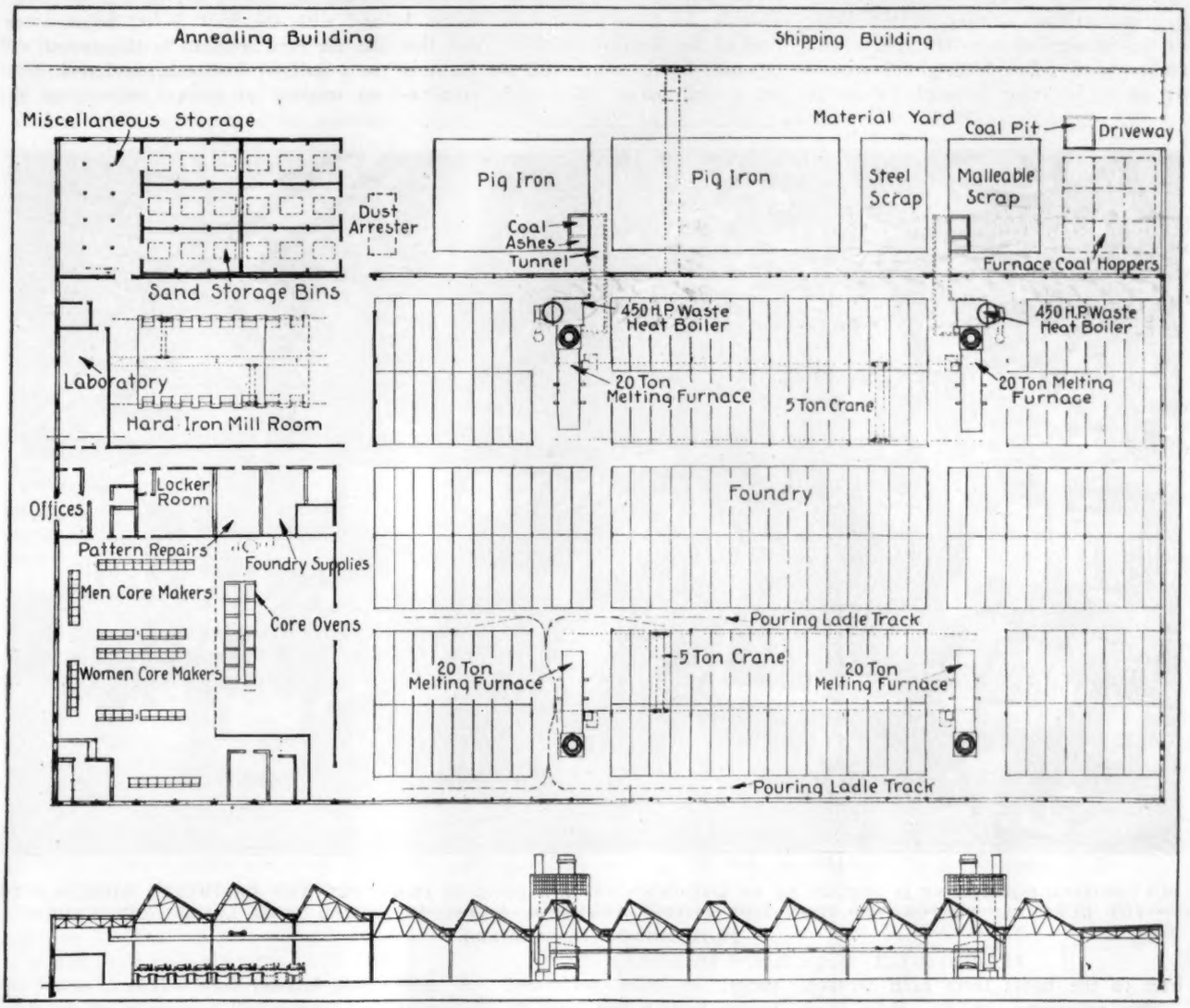
The greatest distance from any furnace to any molding floor will be 90 feet. There will be four 10-foot aisles, two of them along the outside walls. These aisles are provided to afford free approach for the sand cutters, relieve congestion, shorten the distance iron must be carried and give greater all-around freedom, especially in trucking out castings. Cast iron plates form the aisle floors and expedite the movement of sand cutters and trucks.

The molders' benches back up against each other and are separated by a 5-foot partition. Above this partition are tracks upon which a movable shield is hung. This shield is moved with the sand cutters and serves as a backstop to prevent sand being thrown over the partition upon the opposite floor. Concrete runners 24 inches wide form the dividing lines between floors and the sand cutters are run in upon these. The intervening space for the molders' floors is clay. Castings are poured and shaken out on the floors. Ninety per cent of the 200 floors will be equipped with air squeezers. The heavy work is molded in the center bay under a crane.

The sawtooth roof of the foundry has an extraordinary capacity to admit light and exhaust gases. Instead of being vertical, the face of the sawtooth is at an angle of 30 degrees and comprises one row of top hung, one row of bottom hung and one stationary row of sash. Every alternate sawtooth is provided with one row of top hung sash directly opposite the upper top hung sash of the face. This permits an unobstructed sweep of air through the apex of the saw tooth. Steam and gases are dissipated immediately even on the coldest winter day, and at Racine the thermometer frequently threatens to drop through the bottom. The roof trusses are 18 feet above the floor, with columns spaced 36 feet apart. The sidewalls have 10 feet 6 inches of continuous sash and one row of top hung sash, making 15 feet of glass area above the sill, which is 6 feet above grade.

Except that two of the air furnaces will have waste heat boilers as auxiliaries, the four furnaces will be identical. They measure 45 feet long x 9 feet 6 inches wide, outside dimensions. The use of pulverized coal permits the removal of the front bridge wall and the length between bridge walls accordingly is 29 feet; with hand firing this distance would be only 21 feet. The inside width is 6 feet 6 inches. The brick stacks are 55 feet from base to top, with the lining from 9 to 13½ inches and the inside diameter 4 feet. Blower pressure is 3½ ounces. The sidewall plates of the furnaces are perforated to prevent cracking.

The furnaces are set in pairs with 16 double floors between them and a runway for a 3-ton crane over these floors. These cranes lift the bungs, charge the furnaces and transport iron to the



ARRANGEMENT OF FURNACES, WIDE AISLES AND ADEQUATE HANDLING EQUIPMENT ASSIST IN THE DISTRIBUTION OF IRON

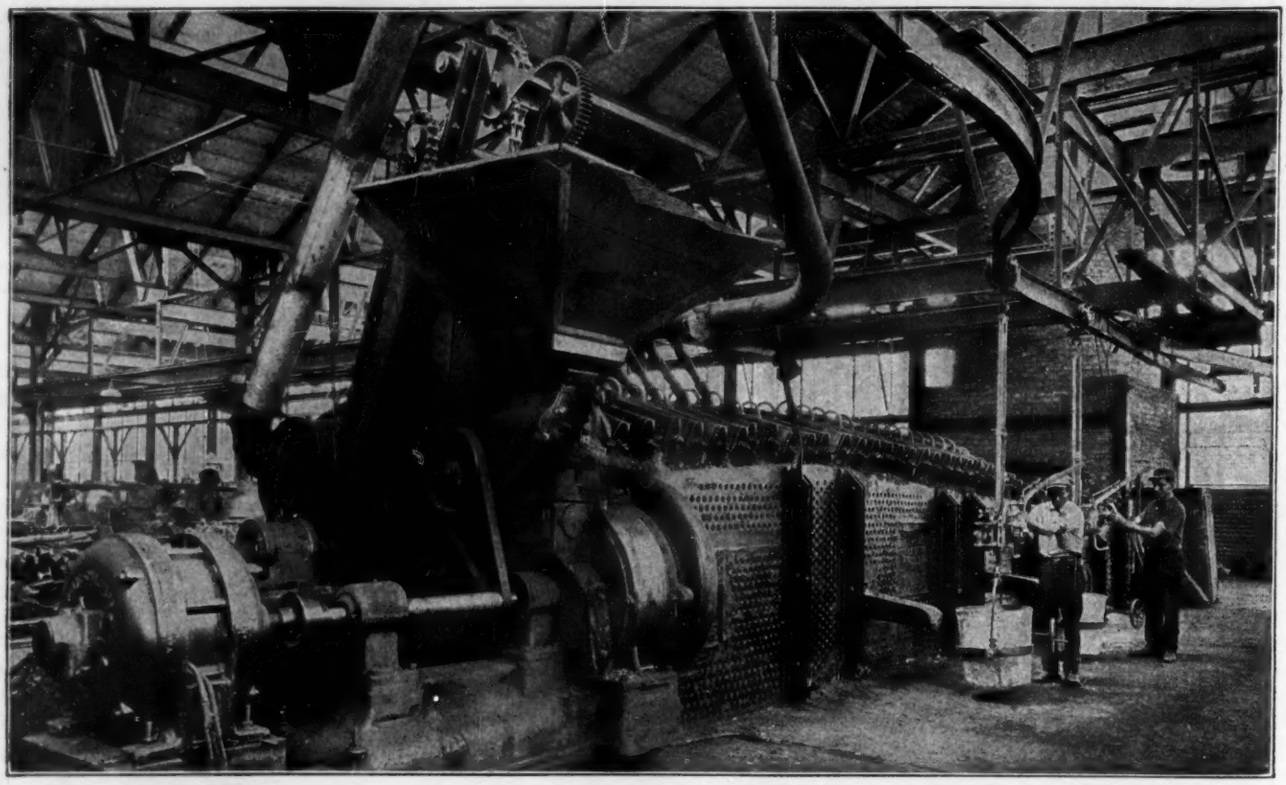
floors they pass over. Special charging buckets holding up to 5 tons are filled and weighed in the material yard and trucked to within reach of the crane. These buckets are of ⅜-inch steel plate, 4 feet 6 inches x 4 feet x 3 feet high. A bail with a catch is affixed so that when they are placed over the furnace a movement of the catch causes the bucket to rotate on its trunnions and discharge its load without damage to the lining of the furnace. A monorail system with trolleys and ladles holding 800 pounds of metal is being installed to handle iron to the floors from each furnace.

The experience of the Belle City Malleable Iron Co. with pulverized coal has shown that the cost of operating the pulverizer is less than 25 cents per ton of iron melted. At the firing end of the furnace, screenings are elevated to a hopper which drops them into the pulverizer, which is direct connected to a 35-horsepower motor. The screenings are ground to 60-150 mesh, picked up by a fan and delivered through a 10-inch pipe to a centrifugal fuel mixer. As the pulverized fuel approaches the nozzle, a swirling motion is imparted to it. The secondary air is admitted through the center and mixes with the fuel at the tip of the burner. The swirling motion insures an even mixture, reduces the velocity, retards the flow of the fuel mixture and results in complete combustion with a melting ratio of 3 to 1 or better. The high temperature zone is near the front of the furnace above the hearth.

Another outstanding feature of economy is the recovery of iron flowing off with the slag, by chilling of the slag immediately on its leaving the slag spout. A concrete pit 7 feet 6 inches x 5 feet x 7 feet deep has been built into the floor. This is filled with water to within 1 foot of the level of the floor. Into this pit, with its top flush with the floor, is set a steel bucket of 1 cubic yard capacity, its sides perforated. A steel trough leads 6 feet from the slag spout to the bucket. A 2½-inch stream of water enters the trough just above the spout and washes the slag into the bucket. The water crumbles the slag, releases the iron and makes its recovery easy by the use of a magnet. When filled, the bucket is hoisted by an electric hoist and its contents dumped into a truck and carried to the material yard. The water used in this operation is circulated by a single-stage centrifugal pump driven by a direct-connected 2-horsepower motor, having a capacity of 100 gallons per minute, and mounted upon a platform beside the stack. After washing the slag into the bucket the water escapes through the perforated sides and is drawn out of the pit through a screen to cmplete its circuit.

By attaching the waste heat boilers to the two furnaces nearest the material yard a convenient arrangement of fuel entry and ash withdrawal is made possible. Firing pits for the boilers will be directly below them, with a width of 10 feet, a length of 14 feet and headroom of 8 feet. Connecting this pit with the material yard outside will be a tunnel 28 feet x 6 feet x 8 feet high and with the floor 9 feet below grade. At the yard entrance to this tunnel will be a well for both ashes and coal. Thus no trucking of coal or ashes over the main foundry floor will be required and the firemen will be entirely off the floor.

Labor cost is reduced and economy is effected in the handling of castings before and after milling by mounting the hard iron tumbling mills upon a platform 5 feet 9 inches above the mill room floor. The mill room is 74 x 120 feet with a wood block floor. The platform is steel, 40 x 58 feet, with a 3-inch wooden deck carrying eight tumblers. Eventually, the platform will be lengthened 11 feet and four more mills erected. After the shakeout, castings are loaded into steel buckets on the molding floors and hauled by a tractor to the mill room, where the buckets are picked up by 2-ton cranes having wheels of the unusual diameter of 20 inches. The cranes handle the covers and load the mills. All exhaust pipes, motors and lineshafts are



PULVERIZING EQUIPMENT IS INSTALLED AT THE FURNACE AND COAL IS POWDERED AND DELIVERED DIRECTLY TO THE BURNERS. PERFORATED IRON SIDE PLATES ARE USED. METAL IS TAPPED INTO LADLES SUSPENDED FROM MONORAIL CARRIERS

below the platforms and only two men are now required to operate the mills. Beneath each mill is an open chute, steel with a wood lining, inclined about 30 degrees. Trailer trucks are spotted under the chutes and when filled are made up into trains for the trip to the annealing department. The mild angle and the wooden lining of the chutes prevent breakage. Eventually a 5-ton monorail, system will handle castings and all material.

The annealing building is brick, with steel trusses, gypsum roof, concrete floor, 77 x 500 feet. A tunnel kiln or continuous annealing oven is in operation in this building. Through this oven which is 347 feet long, truck loads of castings pass continuously. The oven has a capacity of 60 tons of malleable castings every 24 hours. The castings are delivered to this department from the hard iron room and chipped, sorted and packed into annealing pots. The pots then are loaded with a 5-ton crane onto the annealing cars which are spotted on a track parallel to the continuous annealing oven. The cars are pushed into the receiving end of the oven by a gas tractor and are advanced periodically by a hydraulic ram. The cars are allowed to stand on the return track until the castings have cooled sufficiently, after which the pots are picked up by the crane and dumped into buckets. The buckets are conveyed by crane to the soft iron mills and the sand blast mills. Four annealing ovens of the old type are held in reserve.

Handling Problem Simplified

One tilt mill and three sand blast barrels comprise the present sand-blast equipment. Like the hard iron mills, the 12 soft iron mills are mounted upon a platform 5 feet 9 inches above the floor and in similar manner are served by a crane in loading and by gravity in discharging the castings to waiting trucks. The soft iron mill platform is 13 feet 7 inches x 111 feet, with a 3-inch wooden deck covering. The sand blast equipment also is elevated. All exhaust pipes, motors and lineshaft are out of the way in the space between the platform and the main floor. Dust arresters are placed on the roof. Directly beyond the soft iron mill room is the shipping department, which is located in a three story building having a motor truck bay and a direct siding connection with the Chicago & Northwestern railroad. This department is equipped with four drop hammers, 11 grinders and two portable grinders, equipment necessary in turning out good castings for the automotive trade.

The material yard is 90 x 900 feet, lying between the foundry and annealing buildings. A 10-ton overhead crane

CHARGING END OF THE CONTINUOUS TUNNEL TYPE ANNEALING KILN SHOWING ENTRY OF A CAR

equipped with magnet and bucket will serve it. For storing core sand there, a concrete building with two bins of 675 and 975 tons capacity each will be used. Molding sand will be stored in three bins of 975 tons each and one of 675 tons. Six thousand tons of pig iron can be piled, along with 1000 tons of steel scrap, 1200 tons of malleable scrap and 400 tons of furnace coal in the hopper and space is available for 3000 tons more in the yard.

Across the street from the foundry building, but connected with it by a tunnel will be the power house, 52 x 85 feet. Its equipment will include one 300-kilowatt generator, two steam driven and three electric driven air compressors with a combined capacity of 3900 cubic feet per minute. The main distributing switchboard and the hot water system heaters will be placed here. A forced hot water circulating system will heat the entire plant. The present service building, which is 65 x 140 feet, is being remodeled into a modern carpenter and machine shop and pattern shop and storage.

The chemical laboratory doubtless is one of the best equipped in connection with a malleable foundry in the central west. Its equipment includes testing machines for ascertaining tensile strength and elongation. A one-story office building and a one-story garage are across the street from the foundry proper.

In an adjacent foundry, operated as the Racine Steel Castings Co., the Belle City Malleable Iron Co. has a 3-ton Heroult-type electric furnace, which has been in operation since 1916. In this department electric steel castings are produced for tractors, automobiles, railroad specialties and miscellaneous equipment. C. S. Anderson is general manager and M. J. Goepfert general superintendent of the Belle City plant. P. M. Adams is the resident architect employed by the company.

Makers of Principal Equipment

Air compressors	Chicago Pneumatic Tool Co., New York
Annealing oven	American Dressler Tunnel Kilns, Inc., Cleveland
Core ovens	Foundry Equipment Co., Cleveland
Core machine	William Demmler & Bros., Kewanee, Ill.
	International Molding Machine Co., Chicago
Core racks	Foundry Equipment Co., Cleveland.
Cranes	Milwaukee Electric Crane & Mfg. Co., Milwaukee
	Modern Pouring Device Co., Port Washington, Wis.
	Motorbloc Corp. Philadelphia
Dust arresters	W. W. Sly Mfg. Co., Cleveland
Elevators for sand mixer	R. W. McIlvane Co., Chicago
Exhausters	Garden City Foundry Co., Niles, Mich.
Grinders	Safety Emery Wheel Co., Springfield, O.
	Ransom Mfg. Co., Oshkosh, Wis.
Heating system	Almirall & Co., Chicago
Iron mills	W. W. Sly Mfg. Co., Cleveland
Lift trucks	Lewis-Shepard Co., Boston
Oven blower	Spencer Turbine Co., Hartford, Conn.
Power squeezers	Federal Malleable Iron Co., West Allis, Wis.
	Milwaukee Molding Machine Co., Milwaukee
	Wm. H. Nichols Co., Inc., New York
Recording pyrometers	Brown Instrument Co., Philadelphia
Sand blast equipment	W. W. Sly Mfg. Co., Cleveland
	American Foundry & Equipment Co., New York
	Rockford Malleable Iron Co., Rockford, Ill.
Sand mixer	National Engineering Co., Chicago
Sand cutters	American Foundry & Equipment Co., New York
Slag circulating water pump	Chicago Pump Co., Chicago
Steel work	Kenwood Bridge Co., Chicago

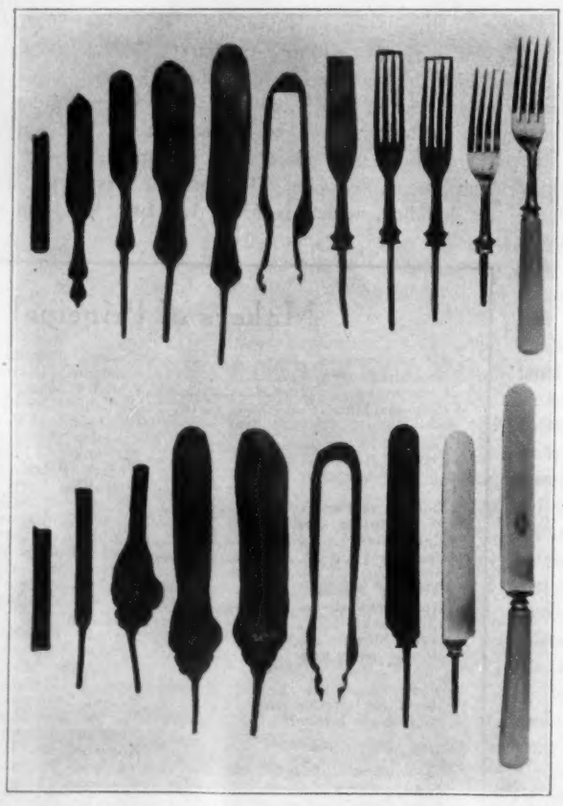
Large Uses of Steel In Small Ways

Knives and Forks

THIS is the sixteenth of a series of articles dealing with some of the thousands of obscure uses of steel which in the aggregate go a long way toward absorbing the great American tonnage, and in proclaiming steel the universal metal. The first article on "Corsets" appeared Nov. 22. Other articles were "Pins," Dec. 6; "Pens," Dec. 20; "Cotton Ties," Jan. 17; "Steel Wool," Jan. 31; "Toys," Feb. 14; "License Plates, Feb. 28; "Spinning Rings and Travelers," March 13; "Hypodermic Needles,' March 27; "Card Clothing," April 10; "Shoe Steel,' April 24; "Tie Plates," May 8; "Crushed Steel," May 22; "Tacks," June 5; "Skates," June 19.

WHILE there is a strong tendency toward the use of nonferrous metals in the manufacture of table cutlery, the great majority of knives and forks today are made of steel. Many are plated or otherwise treated with a noncorrosive coating but many also are just plain steel, hammered, ground and polished. Although the demand for rustproof alloy cutlery is increasing, the increase is not as rapid as growth in demand for table cutlery in general and the tonnage of steel used is growing heavier each year.

Government statistics do not separate steel knives and forks from those made of other material and it is difficult to determine with any degree of accuracy the total tonnage. For the better grades of steel tableware, rods of high carbon steel are used and steel companies supplying the trade with this material estimate that between 2500 and 3000 tons are sold each year for the manufacture of knives and forks. From the high grade tempered steel there is a variation in quality to the cheapest camping or kitchen cutlery and because of the diversity of material used and the great number of companies engaged in the manufacture of some form of cutlery as a side line the total tonnage is estimated by various authorities from 3000 to 5000 tons. The processes of manufacturing the usual good grade table knife and table fork start at the same point, with a piece of ½-inch or ⅝-inch rod 2½ to 3 inches long. The first three or four operations are similar. The rod is heated and drawn out or partly formed under a helve hammer or similar light power hammer. In a large eastern plant each operator has a small electric furnace at hand where the pieces are heated between operations. Forming dies in the case of both the knife and fork develop the ferrule and the general shape. The knife blade is flattened out and shaped by hand under a helve hammer and trimmed to accurate outline in trimming dies. This produces a knife blank fairly accurate as to form and thickness but without a handle and without temper or finish. The next operation is usually that of tempering although in some cases rough grinding precedes. In any case, the process of tempering is an important one and rigid tests are often required. In one plant the finished knife blade must bend back to touch the handle without taking any set.



STEPS IN FORMING KNIVES AND FORKS FROM STEEL RODS. SCRAP REMAINDER REMARKABLY SMALL

Accurate size and final polish are produced by grinding. This is a highly specialized process and varies between plants. In some cases automatic machines have been developed for the first rough grinding but in all cases the final high polish is done by hand.

Forks follow through various stamping and hammering operations much the same as knives. The tines are stamped out but held at the points to prevent bending or warping during tempering and rough grinding. Just before tempering this blank is stamped to give the requisite curve to the tines.

The handle stem is roughened or burred in a special burring machine and to this the handle is glued, when the fork or knife is complete. Handles are made of various materials, ivory, bone, ebony, or special woods, like lignum vitae. The process of making these handles is a specialized industry in itself although frequently forming part of the cutlery plant. Handles are usually sawed from blocks of raw material and finished against abrasive belts or other abrasive agents. In some plants the manufacture of handles has been made almost completely automatic.

In the manufacture of pocket knives additional operations are necessary, the blades being nail-marked, pierced for a rivet and sharpened. A number of additional parts must be assembled in the pocket knife, since, it is a folding device with more than one blade. This requires considerable grinding and finishing beyond that given table cutlery. Since many manufacturers standardize their blades to make them interchangeable in a variety of handles, great precision is necessary in shaping and piercing them. Sharpening and etching the blade are the final steps, the former requiring considerable precision.

Determining the Selling Price of Machine Tools

To Distribute Expense of Idle Plant and Equipment in Time of Slack Business, Builders Are Figuring Costs on Five-Year Averages—Other Methods of Leveling Peaks Employed

BY H. R. SIMONDS

WHEN studied and understood, pronounced seasonal fluctuations in demand for a manufactured product may be distributed throughout the year so that plant operation will be maintained at practically a constant level assuming of course that factors other than seasonal are constant. Distribution or spreading out the seasonal peak in this way to augment the lean months is something like damming a river to form a reservoir insuring an even flow of water.

The author is associate editor at Boston of IRON TRADE REVIEW.

Tool Industry One of Fluctuations

If any branch of industry needs a reservoir of this kind, it is the machine tool industry. It is marked by excessive fluctuations, many of which involve problems other than those of mere business prosperity or depression. The manufacturer who produces in excess of demand during dull times and thus builds a reserve stock runs the risk of having this stock become obsolete through changes in design before it can be absorbed by the next wave of demand. Moreover, a strong machine tool demand does not of necessity exist when general business is good. It is strongest during the brief periods of business acceleration and may be as low during a steady period of good business as during a steady period of dull business.

For this reason methods of control adapted to the manufacture of general equipment are not applicable to machine tool production. A trend curve for a valve manufacturer will widely differ from that of the builder of machine tools. Therefore the tool industry must be considered individually.

John Maurice Clark gives an excellent analysis of this whole question in his book "Economics of Overhead Cost." The purpose in this article, however, is rather to start with some of Mr. Clark's conclusions than to attempt to explain them. One of his conclusions is that the demand for machine tools is of necessity more irregular than the demand for products manufactured by these tools. Another conclusion is that the machine tool industry cannot hope to materially stabilize the tool demand. In other words, there are going to be heavy sale fluctuations in the future just as there have been in the past. It follows from this that prices must be high enough to pay taxes and all expenses of idle capacity to carry over a deep depression, and must in addition to this be high enough to pay investors a satisfactory continuous return. Ernest F. DuBrul, general manager of the National Machine Tool Builders association has pointed out that this return should be higher than that of a less risky industry because otherwise needed capital for expansion cannot be secured.

Several Plans Are Proposed

Starting with the conclusions reached by Mr. Clark, Mr. DuBrul and other investigators, namely that the machine tool demand is subject to excessive fluctuations and that the industry can only be stabilized by establishing prices sufficient to offset these fluctuations, it becomes necessary to devise a method of procedure. It is the intention here

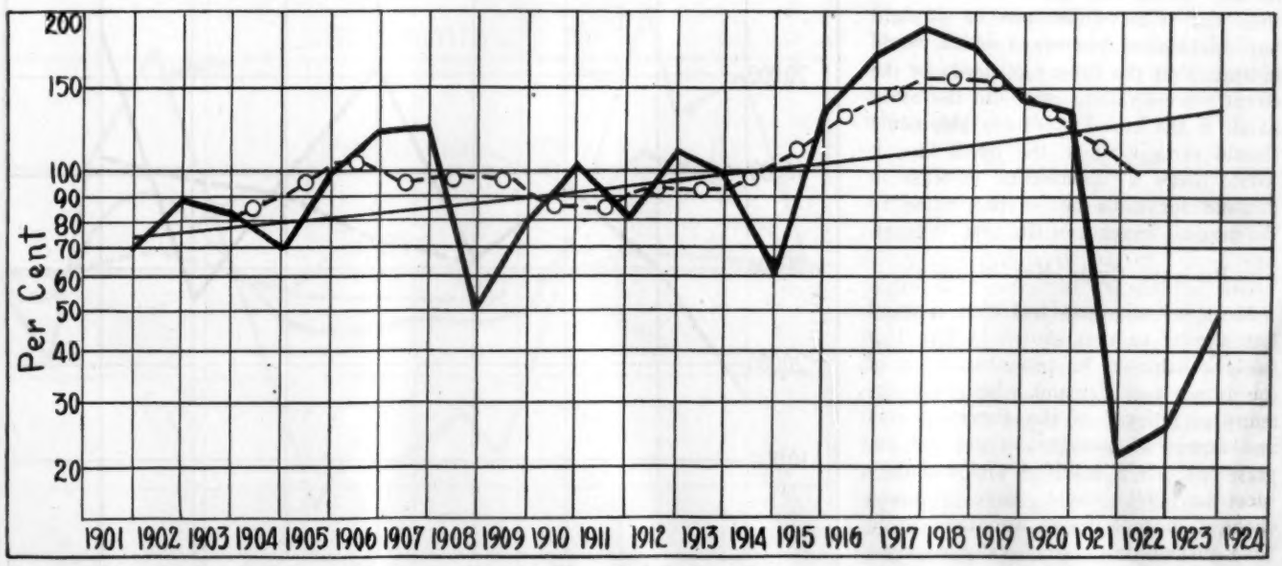


FIG. 1—THE BROAD LINE INDICATES SHIPMENTS OF MACHINE TOOLS FROM REPORTS OF 29 FIRMS OVER A PERIOD OF 22 YEARS COMPILED BY THE NATIONAL MACHINE TOOL BUILDERS ASSOCIATION. THE STRAIGHT THIN LINE IS THE TREND CURVE FIGURED OUT BY E. F. DUBRUL. THE BROKEN LINE IS THE CURVE OF A FIVE YEAR RUNNING AVERAGE

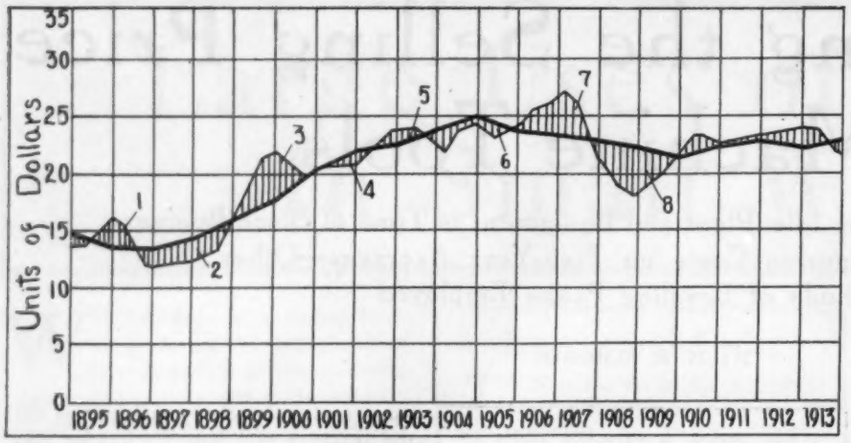


FIG. 2—TYPICAL CURVE SHOWING SALES, WITH A TREND LINE FIGURED ON THE PRINCIPLE OF LEAST MOMENTS. THE SUM OF AREAS 1, 3, 5, ETC. ABOVE THE LINE IS EQUAL TO THE TOTAL AREAS 2, 4, 6, ETC. BELOW THE LINE

to describe some of the proposed plans and also some of the corrective methods which have already been put into use.

Fig. 1 shows a curve of machine tool shipments extending over a period of 22 years. This has been compiled by the National Machine Tool Builders association from reports of 29 firms. The total shipments for the year 1913 has been arbitrarily taken as 100 per cent. The general characteristics of the curve determine the trend line shown. Such a trend line represents the progress of the country's need or the gradual increase in national demand independent of temporary disturbing factors.

If it is assumed then that this trend line—this increase in demand—is to continue, it logically follows that the curve of tool shipments will rise above the trend and then fall below in a constantly recurring manner. If this were not so or if the curve of future shipments were to stay below the assumed trend line, then the trend would not be straight but would bend downward which would indicate that the basic tool needs of the country were falling off. On the other hand, if the curve of future shipments should remain above the trend line, it would mean a fundamental increase in demand for tools out of proportion to the gradual increase of the past 20 years.

Business Cycle Not Mystery

Most investigators feel that a trend line similar to that shown in Fig. 1 is fairly reliable in its prognostication of the future tool demand when such demand is relieved of the disturbing ups and downs of business booms and depressions. If a machine tool manufacturer in 1901 could have foreseen changes in tool design and then could have turned out a practically constant although slightly increasing number of tools from year to year in accordance with the trend line of Fig. 1, then on this ideal assumption the tools which he stored during periods of depression would have just balanced the excess sales during boom periods. Of course, such an ideal situation is highly impracticable, yet knowledge of business barometers and a study of machine tool demand in the past is today almost an essential part of the operating procedure of a manufacturing plant and is the first step towards determining the selling price of tools.

The business cycle no longer is a mystery, but in its essential features is an established fact. For instance, from the curve shown in Fig. 1 it is definitely known during the period from 1921 to 1922 that shipments of tools must eventually show an increase until the rate represented by the trend line is reached. This increase may be subject to temporary reversal just as is being experienced at present, but before many years the tool shipment curve must again cross the trend line. Of course, the trend line may drop materially below that indicated on the national association chart, but for 25 years, and even during war years, trend changes never have been abrupt.

Leveling the Seasonal Curve

Several methods for leveling out a seasonal curve may be employed. Past performance may be taken as a guide or a running average may be established. In the same way a curve showing the fluctuation of demand over a period of years may be leveled out. A line may be drawn by formula of least moments in such a way as to give an equal area above and below it bounded by the curve. A line drawn in this way is shown in Fig. 2 where, the sum of the areas 1, 3, 5, and 7 etc. are equal to the sum of the areas 2, 4, and 6, etc.

Another way to establish a trend is to employ a running average. In this case a period of a certain number of years is taken as the unit. As each year passes its records are added to this unit and the records of the earliest year of the unit are dropped.

E. J. Kearney, Kearney & Trecker, Milwaukee, was one of the first to adapt the running average to the operation of a machine tool plant. He took five years as the unit period and then considered this period in almost exactly the same way as the average business house considers the one year period. Mr. Kearney's longer year was divided into five months. His estimates and dividends, buying, stocks and plant operation all were based on this five-year period. In this way a depression of one

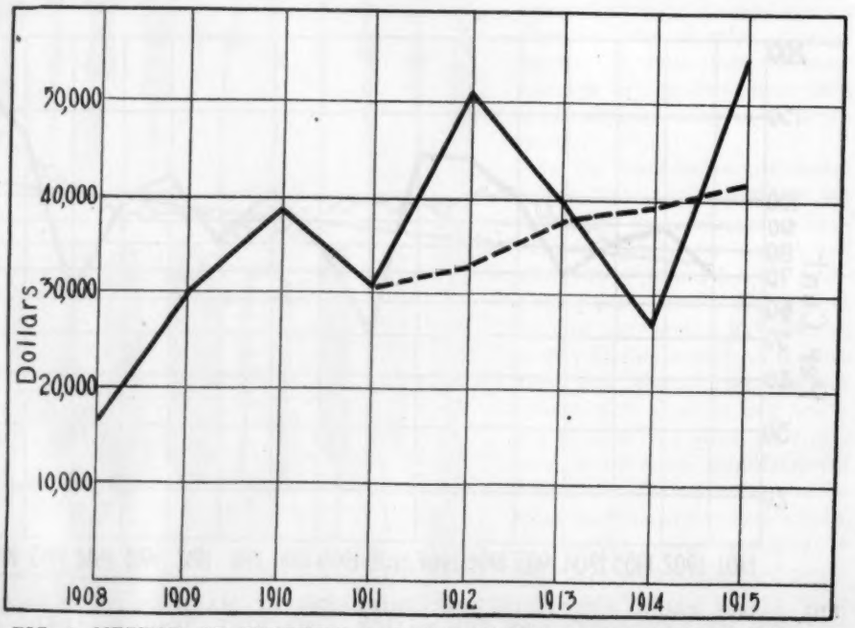


FIG. 3—METHOD OF PLOTTING A CURVE BASED ON FIVE-YEAR AVERAGES. THE SOLID LINE IS CURVE OF SALES AND THE BROKEN LINE THE FIVE-YEAR AVERAGE CURVE OR TREND CURVE

or two years took on the aspect of a seasonal variation. A manufacturer of a commodity such as ice skates working on a one year basis is so thoroughly prepared for the dull season that the records of his seasonal depression do not even form a part of his report to stockholders. The total for the year is all that is considered. Similarly, under Mr. Kearney's scheme the total for a five year period is the only consideration. In actual practice there is, of course, considerable difference. A five-year scheme of plant operation usually is subjected to revision and adjustment at the end of each yearly period. The chief advantage is gained through the broader outlook and through the recognition of business booms and depressions as part of the normal order of things, in just the same way that a skate manufacturer recognizes his seasonal fluctuations as normal.

Using the Running Average

The application of a running average to a fluctuating demand is shown in Fig. 3. This is a curve taken from the records of a machine tool manufacturer over a period of 10 years with the running five-year average shown for the last five years. Each of the points on the fluctuating solid curve is fixed by the average weekly sales for the year just passed. When a new year passes, as for instance 1912, the total representing the average weekly sales throughout that year becomes a new point on the solid curve. Five consecutive totals when averaged give a point on the broken curve which is a trend or a running average curve. In 1913 the average weekly sales according to the solid curve were $40,000. The average weekly sales for the five-year period ending in 1915 were about $38,000.

Some difference of opinion is found in the position for plotting the five-year average. Logically it should be placed at the center of the five-year period, but this would mean that the trend thus established would always be two and one-half years behind the present. For the purpose of harmonizing an individual plant trend with a national barometer, such central plotting undoubtedly is advisable. However, when a five-year period is considered on the same basis as the usual one year period, the average sales or demand determined at the end of the period gives a working figure which is an important factor in determining costs and in looking ahead to the coming five-year period. The point here being considered is more the policy of looking at a longer period than one year in determining machine tool costs rather than the method of operation during such a longer period. It is sufficient then to assume the adoption of a longer business period than the one-year period by a machine tool manufacturer, and leaving the details of operation out for the moment, to try to show how such a longer period tends to level out the curve of machine tool costs.

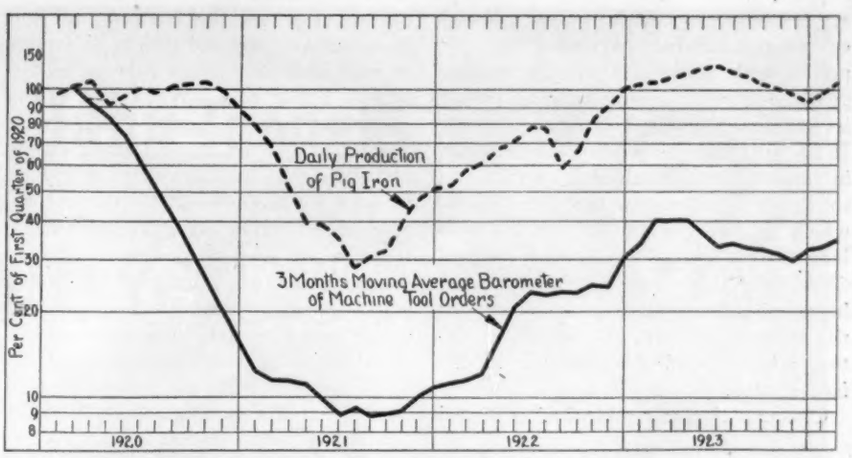


FIG. 5—COMPARISON OF MACHINE TOOL ORDERS WITH PIG IRON PRODUCTION IN PER CENT OF FIRST QUARTER 1920 AVERAGES

The title of this article has been taken as determining the price of machine tools. Strictly speaking the price of any commodity is a factor dependent upon demand and supply and as such cannot be determined in the sense of arbitrarily establishing standards. Psychologically, at least, the cost of an article has an important bearing on the price and reliable information as to cost will not only tend to save the individual manufacturer from failure, but will tend to establish the whole industry on a higher level of permanence and prosperity. Therefore, since the cost is the only factor which may be directly determined, it is the influence affecting the cost which must be studied.

The Cost of a Tool

One of the chief problems before the manager who plans to operate on say a five-year schedule is that of excess capacity. Of course, at present the whole machine tool industry is operating under the handicap of large excess capacity. It has been estimated that the present capacity is 30 per cent above the country's normal requirements. Therefore, to say that the machine tool production today is 50 per cent of capacity has little significance unless the relation between capacity and normal demand is known. The term normal is ambiguous but is here used to mean the actual trend of the industry which is indicated by one investigator as the straight line in Fig. 1.

A tool manufacturer with a fairly

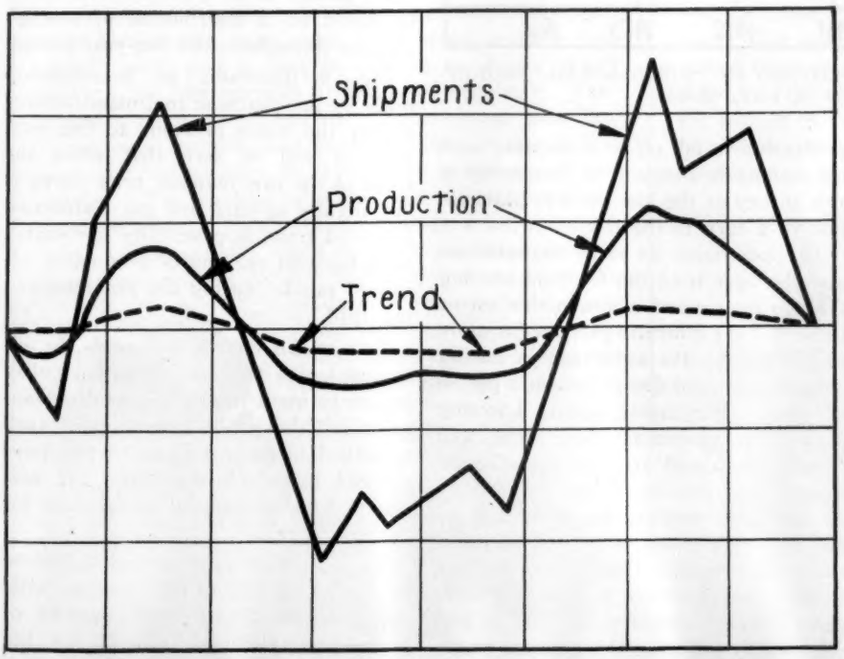


FIG. 4—ACTUAL CURVES OF A MACHINE TOOL MANUFACTURER, UNITS USED NOT BEING AVAILABLE. IT IS SHOWN HERE TO ILLUSTRATE THE USE OF A COMPROMISE CURVE IN FIGURING PRODUCTION

staple product and with past records and curves at hand faces a future five-year period with some idea of the average yearly demand. This average he knows is materially below his plant capacity. If he is to accept his five-year program in earnest, he will establish his production to conform closely to the trend curve which he has worked out for his own individual plant. This figures perhaps 65 per cent of his capacity. To cut down his overhead he must find some use for the other 35 per cent. Various manufacturers have faced this problem in different ways.

One manufacturer recently has rented his whole plant except the equipment, and has moved such equipment as needed for the reduced production into a smaller building at a marked saving in rental. Other manufacturers have started auxiliary lines to utilize the idle plant equipment. Still another has disposed of part of the manufacturing equipment and plans on using the space thus relieved for extra storage.

With this problem out of the way and with production going ahead at the trend rate, the question is what is the cost of making the individual tool. If the demand is below the trend, part of the tools are being stored and then, of course, the cost of each tool going out on current sales includes part of the cost of storing the tools which are going into stock. Under strong competitive conditions such as usually exist when the demand is below the trend, the storage charge often will be ignored but it is there nevertheless and should be figured as cost and the actual sale price carried as below cost. When you extend operations over a period of several years and plan on storing stock during dull times, the question of cost is complicated by factors which may not appear in operation on an annual basis. Pig iron and labor costs fluctuate. Building for stock on a gradually declining market frequently entails the use of high priced raw material. The raw material price curve and the machine tool demand curve usually are somewhat similar so that if a manufacturer allows his production to fall off in accordance with the decline in demand, he frequently is able to buy at the low point in anticipation of a turn in the tide.

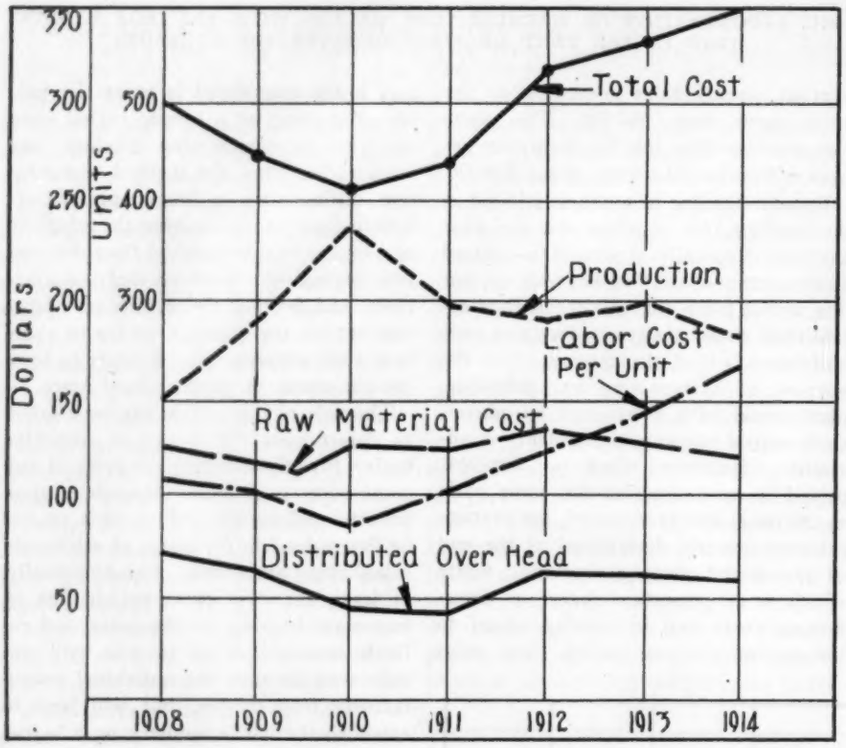


FIG. 6—VARIOUS ITEMS OF COST ARE PLOTTED IN THIS DIAGRAM. PRODUCTION IS PLOTTED ON A UNIT BASIS

The experience of many manufacturers who have tried the five-year moving average for control of production seems to be that the difficulty just cited is more than offset by the advantage in having constant material demands over a period of years. Purchasing agents knowing material requirements one, two and three years ahead are able to make favorable contracts not otherwise possible. In the labor market the advantage of an even production is, of course, even more pronounced. High labor turnover is far more expensive than any records show. Steady employment year in and year out is probably the greatest single factor in producing labor efficiency. These and other advantages swing the balance in favor of fairly uniform production based on the trend curve wherever the commodity is free from the danger of obsolescence. Building for stock in machine tool business is frequently a gamble against the chance that inventive genius and change in tool design will lessen the basic demand for the individual tool stored.

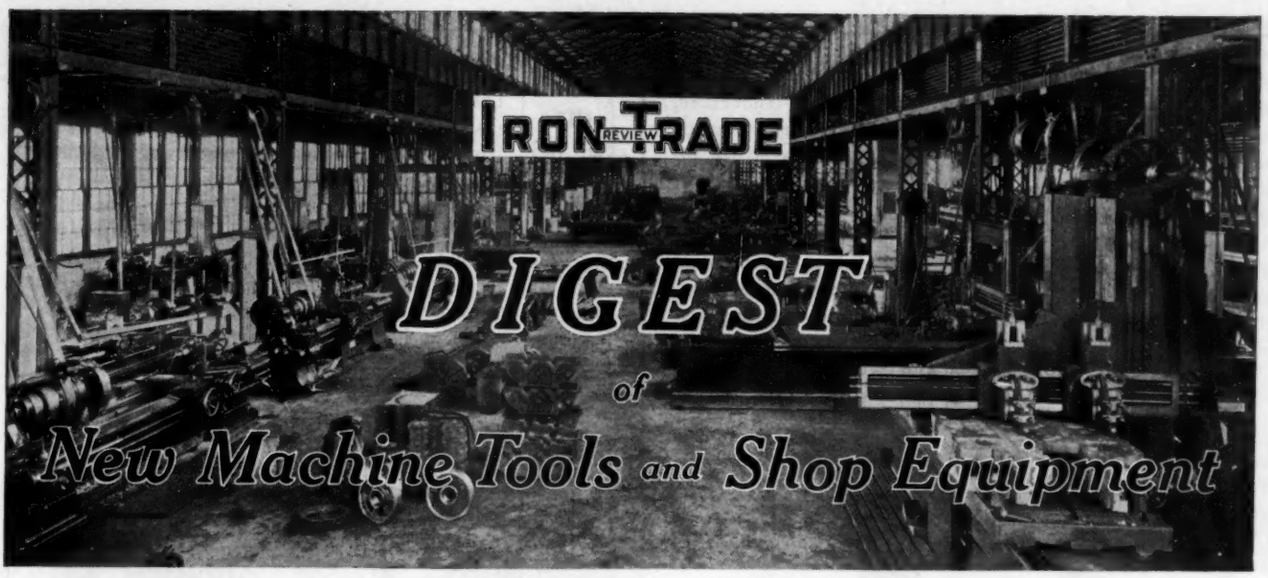
As a result most manufacturers who have tried to follow a trend curve in their production program have adopted a compromise. One manufacturer has established a definite policy based on a compromise. Fig. 4 is an illustration of this policy. A curve of actual shipments, a trend line determined by a running average, and a curve of actual production are shown. These three curves are projected into the future as accurately as possible in the light of past experience and future production is then carried on along the projected curve. Such a scheme has several advantages. In fact, it embodies part of the good features of the uniform production policy with precaution and insurance against changes in design or faulty prognostication. The production curve in the case shown is arbitrarily built up with half the fluctuation of the actual shipment curve. Other manufacturers may find it advisable to change the proportion existing between these two curves, but the policy of adapting productions to some form of a guiding curve is almost universally advantageous.

A compromise curve may be established to cover price as well as production, that is, it could be done if the necessity for meeting competition were not a factor. Such a price curve would be based on a distribution of storage charges throughout the five-year period.

Fig. 6 illustrates an investigation made by one machine tool manufacturer during the years previous to the war. Here it will be seen that while the trend of the raw material price curve is but slightly upward and the distributed overhead trend is practically horizontal, the labor cost per unit of production advanced rapidly during the years following 1910.

To sum this up in a few words the advantages of a five-year operation policy appear to more than offset its disadvantages and those who have adopted such a method of control claim first to have reduced manufacturing costs, and second to have determined actual costs for the first time.

The cost of a machine tool should be figured as the sum of the labor, material and overhead charges for a period of years—preferably five—divided by the total production of tools during that period.



Railway Exhibit Brings Out New Tools

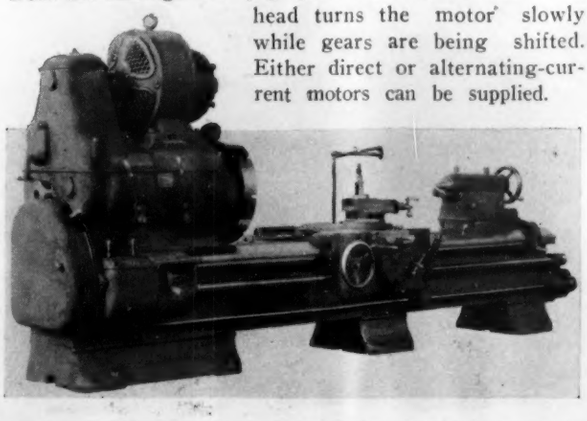
JUNE was marked by the introduction of an unusually large number of new models of machine tools and shop equipment. Doubtless the announcements of many of the machines were timed to coincide with the joint convention of the American Railway association and the Railway Supply Manufacturers' association at Atlantic City, where an extensive collection of machine tools was exhibited in connection with other equipment for railroad operation and maintenance.

The exhibits, which were briefly mentioned in the June 19 issue of IRON TRADE REVIEW, undoubtedly comprised one of the most representative displays of machine tools and shop equipment ever presented at a convention. Although the exhibition was intended primarily for railroad shop tools and

Engine Lathe Extremely Rugged

No. 118

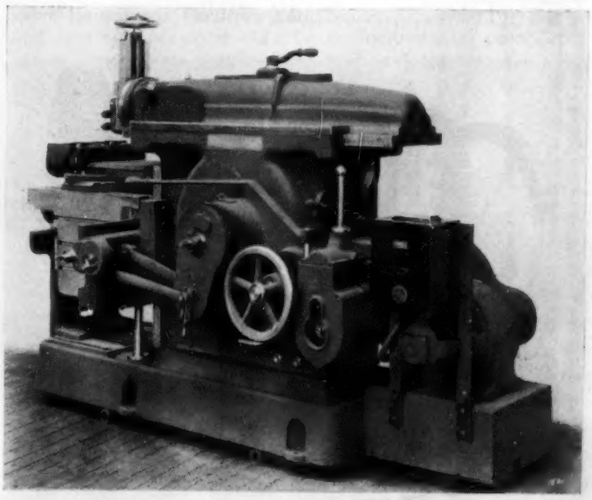
The Niles-Bement-Pond Co., New York, has just announced the design of a new 27, 30 and 36-inch engine lathe which has for its features greater driving power, greater strength and rigidity, ease of operation and increased endurance. The bed is cast with a solid web over the top to tie the two ways together rigidly. A heavy, rigid tool slide has a wide bridge with large ways. The apron is made with double walls and is cast in one piece. Rapid power traverse for the carriage is furnished regularly. Feed changes are accomplished by a quick change gear box which is a complete and separate unit. A thread dial makes it unnecessary to reverse the motor for thread cutting. The machine is started and stopped from the carriage and on direct-current machines advantage is taken of the variable speed motor to get speed changes from the carriage. A "jog" push button mounted on the head turns the motor slowly while gears are being shifted. Either direct or alternating-current motors can be supplied.



Shaper Is Built for Heavy Duty

No. 119

The Stockbridge Machine Co., Worcester, Mass., has built a heavy-duty, 32-inch crank shaper in which the bull gear has a double bearing. In addition the overhang of the bull gear, or crank wheel, has been eliminated. The double bearing consists of the usual hub bearing on one side and an outer support or ring bearing on the opposite side. This outer bearing is on the inside of the column placed close up to the rocker arm and consists of a ring fitted into the column. The head has a graduated swivel for setting to any angle and is provided with a clapper box of improved design with planer type solid binding clamp. The speed box is of the selective type.



Truck Handles Loads from Floor

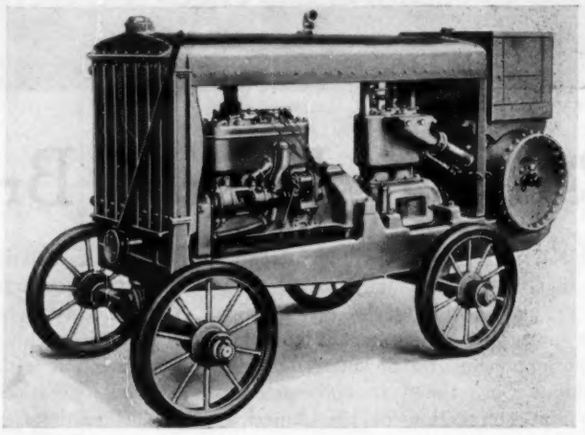
No. 120

The Elwell-Parker Electric Co., Cleveland, has designed a new type of electric elevator tractor for picking up or placing loads directly on the floor. The elevator head at the forward end may be equipped with two or more forks at the floor line, 1 to 2 inches thick and of proper spacing and length to handle sheet tin or steel plate, bales, boxes or barrels, car wheels, heat treating receptacles, a tilting table, dump body or the like. When fitted with a pair of arms 18 inches above the floor it handles tote barrels and when provided with a single horizontal shaft it handles coils or wheels. The operator's seat is located forward over the battery compartment.

Air Compressor Does Light Work

No. 122

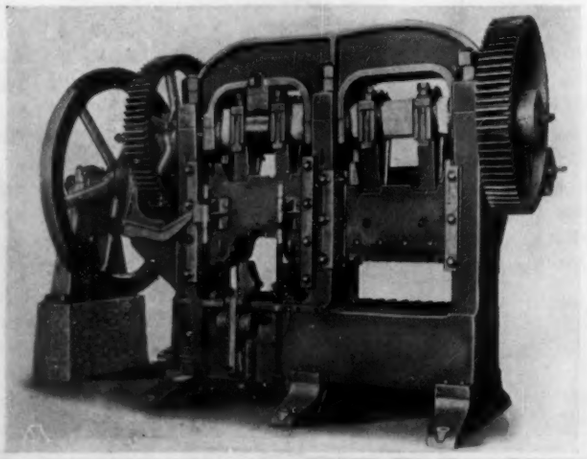
The Chicago Pneumatic Tool Co., New York, has developed a 100-foot, gasoline engine driven, portable air compressor of sufficient capacity to operate one rock drill, two concrete busters or two clay diggers, two riveting or calking hammers or four backfill tampers. The compressor is of the vertical, single-acting, duplex type. A differential unloader regulates the air supply and an autopneumatic throttle provides additional fuel economy by slowing the engine to idling speed during the unloaded periods and speeding it up again just before the load is resumed. Splash lubrication is provided, a small pump being used to maintain a constant oil level in the splash troughs. A gasoline engine supplies power.



Improves Press for Making Axes

No. 121

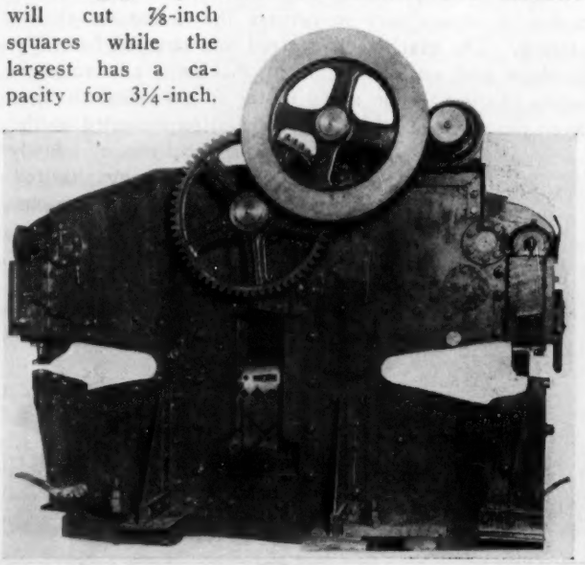
The Lewis Foundry & Machine Co., Pittsburgh, has designed an improved press for the initial operations of forming and punching ax heads. It is built in two parts, mounted in a common frame, but operated independently. One side operates continuously and is used for forming the ax polls. The sliding head and bed are so arranged that the forming dies may be keyed in place. The other side is for punching the polls and is operated intermittently, being controlled by a clutch. Since this side operates intermittently and the other side continuously, separate sets of gears and crankshafts are required. This press is operated by two men who stand together in front of the machine. The first man operates the forming side on the right and the second man controls the punch side.



Redesigns Punch and Bar Cutter

No. 123

The Buffalo Forge Co., Buffalo, has developed an improved method of effecting plunger engagement in its series of single-end punch and bar cutters. The new design, which is claimed to insure more positive action, consists of a block and ram controlled by the counterweighted lever. The block occupies a stationary position, while the ram which actuates the plunger moves in a semicircular direction and seats on the tool steel block. The counterweight on the controlling lever automatically throws the plunger into an engaged or disengaged position. The smallest size machine will cut ⅜-inch squares while the largest has a capacity for 3¼-inch.



appliances, nearly all of the machines and much of the equipment shown were applicable to all branches of the metalworking industry.

Many Machines Displayed

Of the 375 exhibitors, using 102,988 square feet of floor space, more than 100 showed machines and accessories of general application. About 40 builders of machine tools were represented, lathes, grinders, shapers and drills predominating. Twelve manufacturers displayed hoists, trucks, cranes and other material handling equipment and 10 companies demonstrated their welding apparatus. Small tools, including taps, dies, pneumatic drills and chippers, wrenches, etc., were shown by 16 manufacturers and forging machinery, riveters, shears and metal saws were exhibited by 16 companies. Miscellaneous shop equipment was displayed by nine concerns. A number of the units described in the accompanying pages were operated in public for the first time at the Atlantic City show.

Considering the probable influence of the railway exhibition, it is not surprising that rigidity and strength are the outstanding characteristics of many of the machine tools announced during the month of June just closed.

A good example is found in the 27, 30 and 36-inch engine lathes developed by the Niles-Bement-Pond Co., described as No. 118 on page 39. The builders state that this type of machine was designed to afford greater strength and rigidity, more driving power and greater ease of operation than possessed by its existing models. Rigidity is sought by several new departures in design, notably a solid web cast over the top of the bed to tie the two ways together, large ways for the carriage, and the elimination of overhung gears. The apron is compact, allowing the operator to get close to the work. One lever, instead of two, operates both the cross and longitudinal feeds. It is equipped with a safety trigger so that it is impossible to go from crossfeed to longitudinal feed or vice versa accidentally.

Another detail which adds to the ease of operation is a "jog" button, which when pressed by the operator, causes the gears to turn over slowly so that they may be shifted easily. When the button is released the machine stops. This arrangement is useful when it is desired to turn the faceplate through a small angle to adjust the jaws that hold the work in place.

Improved design also is apparent in the new shaper developed by the Stockbridge Machine Co., which is described as No. 119. Instead of overhanging, the bull gear is supported on two bearings, one being the usual hub bearing on the inner side and the other a ring bearing on the outer side. The heavy crossrail is elevated by two screws instead of one. In the interest of safety, the crossfeed is designed to operate only on the return of the ram and cannot be fed on the forward stroke.

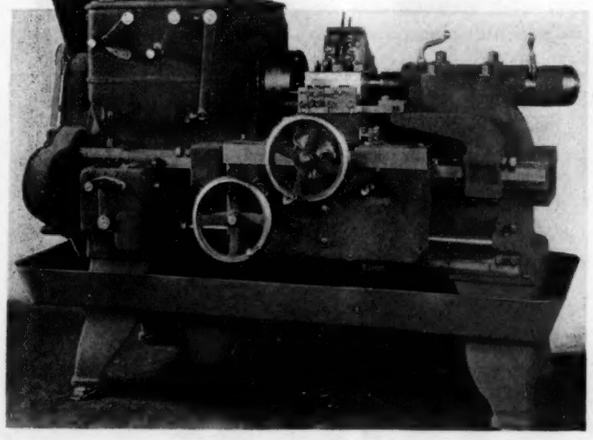
Develop Production Aids

The station type of chucking machine developed by the New Britain Machine Co., and described as No. 128, is an interesting example of a class of equipment rapidly gaining favor because of its labor-saving possibilities. This machine is designed for forgings and castings on which facing and forming operations are required in addition to drilling and reaming. By employing the multiple-spindle principle, the machining operations are subdivided so that the time of chucking becomes the limiting factor in rate of production. To provide for a quick chucking or unchucking with stopping of the spindle so that

Builds General Production Lathe

No. 124

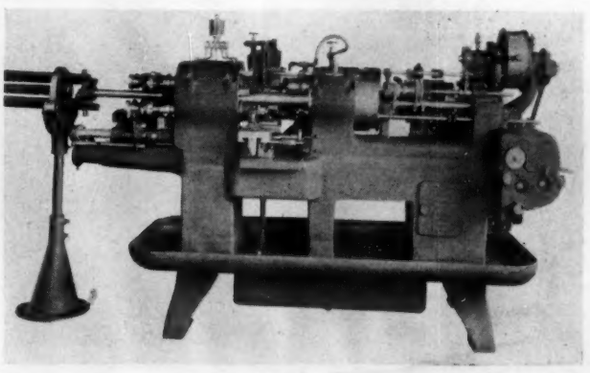
The Reed-Prentice Co., Worcester, Mass., is introducing a new design of 4-speed production lathe which is said to be well adapted to the automotive and general manufacturing trades for straight, taper and form turning, straight and bevel facing, recessing and straight form boring. Since the machine is built extremely rugged, extra heavy cuts may be taken at one time both with the front and rear tools. The headstock is of box construction and has four spindle speeds obtained through sliding gears and crank levers conveniently located on the front of the headstock. The drive is through a disk clutch and brake located at the rear of the head and operated by hand lever at the front of the headstock.



Adds Multiple Spindle Automatic

No. 125

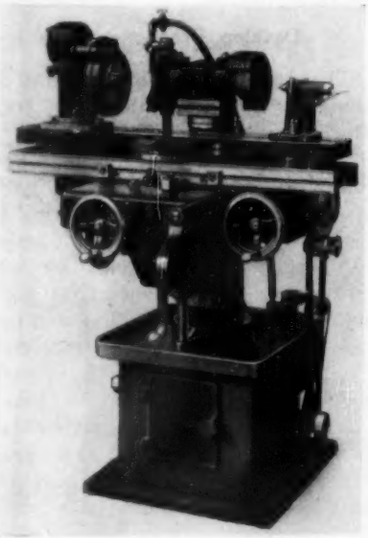
The Cleveland Automatic Machine Co., Cleveland, has brought out a multiple spindle machine built along lines similar to a single spindle type made by that company. The tool turret is a heavy cylinder of hard cast iron mounted in a turret head bearing also sliding on a center tube which is a hardened and ground steel tube supported in a fixed bearing back of the turret and at the other end of the spindle cylinder. The first and second positions are out in front while threading and accelerating spindles are in the rear, this feature rendering the setting up of box mills accessible. A feature of the tool turret is the independent tool spindle at the fourth position, by which any tooling operation may be performed and completed in the fourth position before the other tools have finished their work.



Toolroom Grinder Has Power Feed

No. 126

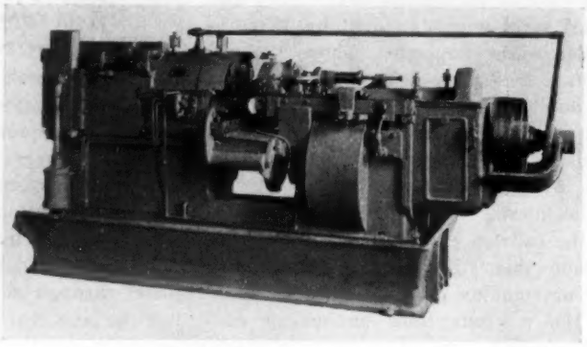
The Gallmeyer & Livingston Co., Grand Rapids, Mich., recently introduced a universal, motor-driven toolroom grinder with power feed and wet grinding attachment. Two motors are used; the one driving the grinding wheel spindle and power feed is concealed in the base of the machine and the other is mounted on the headstock and is used for revolving the work when doing cylindrical, internal and similar grinding. The wet grinding attachment consists of a pump, tank and piping, the pump being mounted on the tank and forcing water to the wheel through a large pipe, giving volume without pressure. Provision is made for returning the water to the tank. From the rear of the table it is possible to operate the longitudinal travel by a rapid action lever and also to operate the transverse movement or vertical motion. Gears run in an oil bath.



Chucking Machine Has Wide Range

No. 128

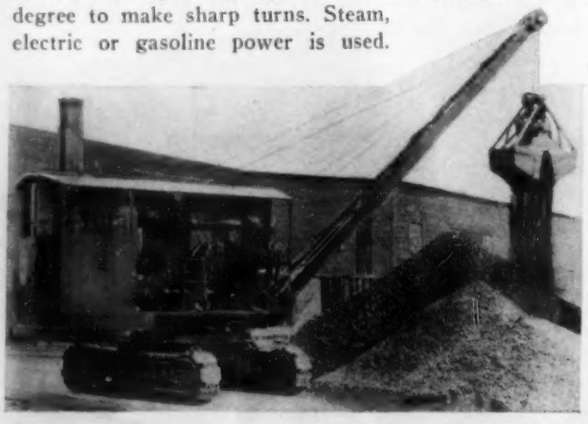
The New Britain Machine Co., New Britain, Conn., has placed on the market a pneumatic station type of chucking machine for machining forgings and castings on which facing and forming operations are required in addition to drilling and reaming. The air control is one of the features of the new machine. It is operated by a single air valve each time a work spindle is indexed into the loading position. The control serves to disengage the drive to that particular spindle, applies a brake to stop the spindle rotation quickly and actuates a clutch mechanism to release the work. When the chuck has been reloaded, the air valve is operated a second time to grip the jaws on the work, release the brake and engage the drive to the spindle. The machine is built in two sizes, one weighing 10,500 pounds and the other 7500 pounds and each size is equipped with either four or six work spindles.



Crane Motions Made Independent

No. 127

The Industrial Works, Bay City, Mich., has designed a 10-ton crawling tractor crane embodying many new engineering features. One of these features is the independent control of the traveling, slewing and hoisting motions, thus a number of combinations of motion are available. The entire upper works of the crane rests on a rotating steel base which insures rigidity and alignment. This base rotates on four conical steel rollers. Tractor shoes are close fitting and operate over adjustable idle sprocket bearings which take up the slack in the tractor belt. The crane has two traveling speeds and reversal of direction is accomplished by reversing the engine. Steering while propelling is done from the operator's platform through friction clutches and brakes controlling each tractor belt. Either belt may drive, coast or be held by brake in any degree to make sharp turns. Steam, electric or gasoline power is used.



Bending Rolls Greatly Improved

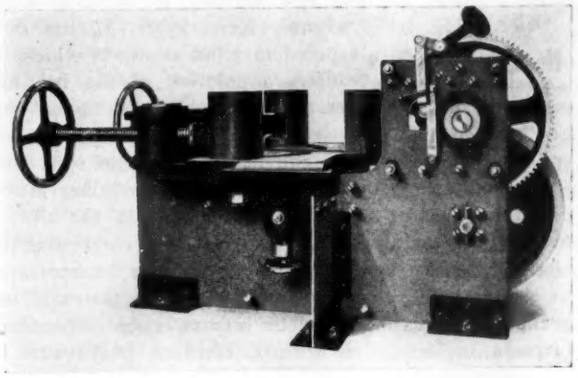
No. 129

The Buffalo Forge Co., Buffalo, has announced a number of improvements in its series of bending rolls. One of the principal features is the newly designed train of rolls which allows the bending of angles singly, either with the leg inside or outside. Easier and more even adjustment of the rolls in bending is insured through replacement of the springs supporting the top roll and bearing with a counterbalanced lever. Less pressure is needed by the operator to regulate the rolls and at the same time the wear on the controlling mechanism is reduced. A wide variety of work is possible with these rolls. Angles, tees, channels, I-beams, flats, rails, wrought iron pipe and odd sections can be rolled into rings.

Bending Press Has Many Features

No. 130

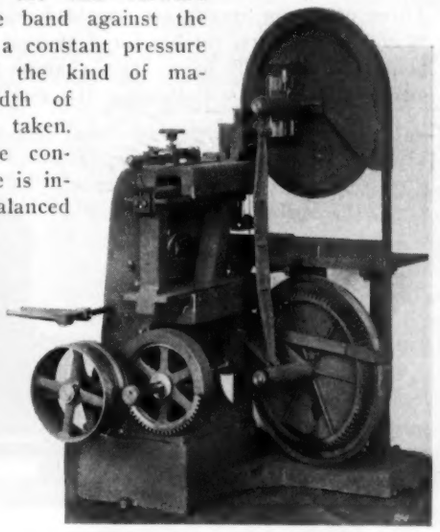
Henry Pels & Co., Inc., 90 West street, New York, recently designed a horizontal eccentric bending and straightening press embodying features attractive to railroad car shops and iron and steel manufacturing shops generally. It will handle bars, angles, beams and other sections. The bending blocks move forward or backward on an arc, making their center distance short when near the ram head and lengthening as they recede. This movement automatically accommodates the varying sizes of sections and lengths of radius. This arc line of travel of the bending blocks has been determined from the moment of resistance of various sections, figured theoretically and combined with results of actual tests. The machine has an unusually heavy steel plate frame. The table is wide and substantial and has a horizontal roll on each side to facilitate ease of handling materials.



Metal Band Saw Cuts with Speed

No. 132

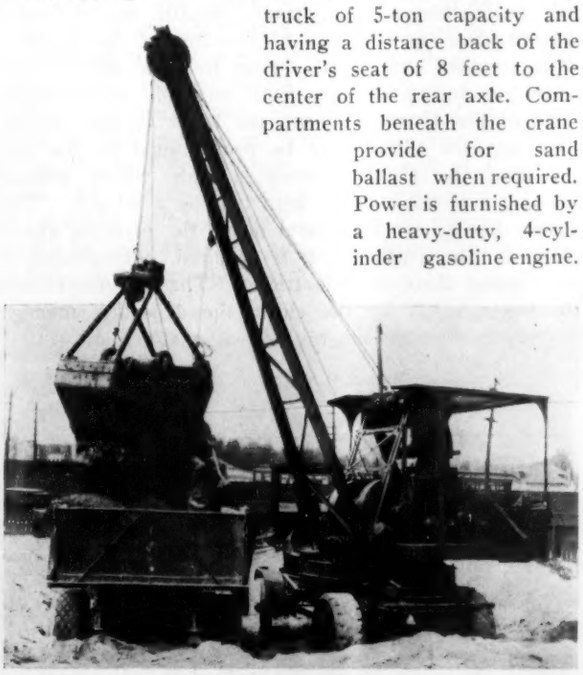
The Stockbridge Machine Co., Worcester, Mass., announces an improved model of high speed metal band saw. This machine consists of a base on which is mounted the column and work support table. In the column a ram slides on scraped ways. The disk wheels are carried on the ram and move with it. The band travels in a vertical position and is carried between two sets of guide rolls directly above and below the work, these rolls being adjustable up and down for different sizes of stock. Attached to the ram are gravity weights which alone would move the ram forward and keep the band against the work and at a constant pressure regardless of the kind of material or width of cut to be taken. However, the constant pressure is insured by a balanced control which functions according to the position of the weights. This maintains constant pressure.



Crane Is Placed on Truck Chassis

No. 131

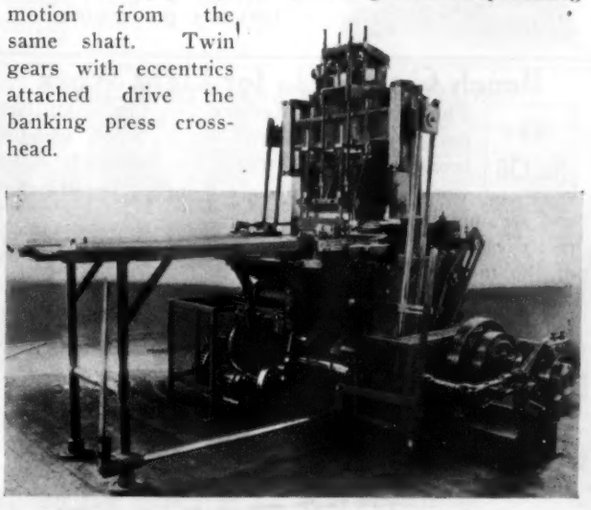
The Orton & Steinbrenner Co., Chicago, has built a new material handling machine which combines the advantages of a crane with the speed of a motor truck. The crane is full revolving and for this reason is said to be able to lift heavy loads at great distances without danger from tipping over. The unit can be mounted on any truck of 5-ton capacity and having a distance back of the driver's seat of 8 feet to the center of the rear axle. Compartments beneath the crane provide for sand ballast when required. Power is furnished by a heavy-duty, 4-cylinder gasoline engine.



New Press Combines Two Machines

No. 133

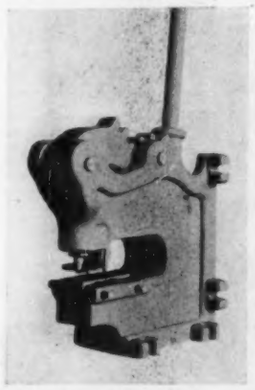
The Max Ams Machine Co., 101 Park avenue, New York, has developed a combination blanking and edging press which handles two operations in the manufacture of body sections for tubs, pails and similar articles formerly requiring two machines and two or more operators. This machine requires one operator who places the metal sheet on the feed table against the back gage. From this point on, the action is completely automatic. A sheet as large as 27 x 72 inches can be accommodated automatically. The machine consists of an upright blanking press and a 45-degree inclined forming press, both receiving their reciprocating motion from the same shaft. Twin gears with eccentrics attached drive the banking press crosshead.

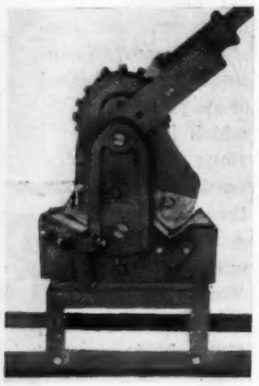


Two New Hand Tools Are Designed

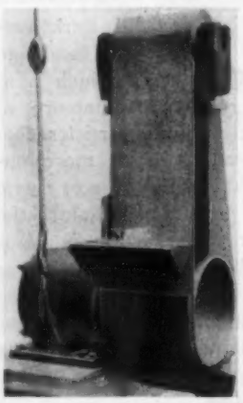
No. 134

Ed J. Dries & Co., 200 Second street, San Francisco, have announced the design of two new tools, a hand punch press and a hand angle shear and notcher. The punch press, which utilizes standard punches and dies, is provided with gear teeth at different distances from the pivots and the arrangement is such that the greatest pressure is applied to the punch when it enters the job. The machine can be set on a bench or fastened to a post. Angle steel can be punched within ½ inch of the flange from the outside face. In the angle shear and notching machine, the shearing off cutters are on one end and the miter die is on the other end. Three operating speeds are provided—direct action for ⅛-inch angle bars, ratchet for 3/16-inch bars, and compound for ¼-inch bars. The changes of speed are made quickly by withdrawing the pin with the loop.





Belt Sander Has Two Positions



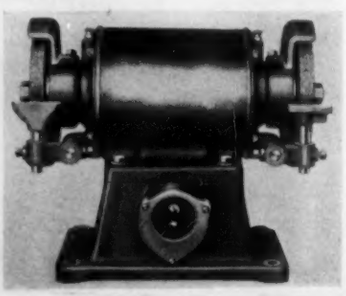
No. 135

The Porter-Cable Machine Co., Syracuse, N. Y., has brought out a belt sander and grinder having a grinding bed 6 x 18 inches. By the use of the grinding bed in either a horizontal or vertical position, the machine is convenient for many different operations. Power is furnished by a ½-horsepower motor direct connected to a 7½-inch pulley, this driving the abrasive belt at 3300 feet per minute.

Bench Grinder Is for Light Work

No. 136

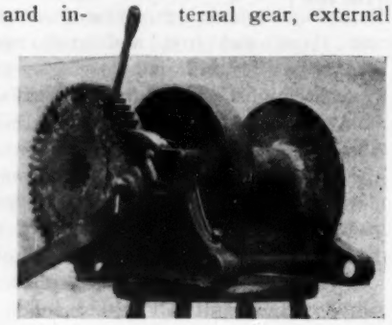
The Hisey-Wolf Machine Co., Cincinnati, has designed a small two-wheel bench grinder brought out particularly for extremely light work. The wheels are 6 inches in diameter and are mounted directly on the ends of the motor shaft which runs at 3400 revolutions per minute. Motors of ¼-horsepower are used and either direct or alternating-current types can be supplied.



Hand Hoist Simply Constructed

No. 137

The Machinery Exchange, Seattle, Wash., has designed an all-steel hand hoist consisting of eight main pieces. The drum shafts and internal gear, external gear with shaft and internal pinion and pinion are each made in one piece. The remaining main parts are the handle, brake, brake lever, dog and two steel side frames.



Welding Rod Compensates for Heat

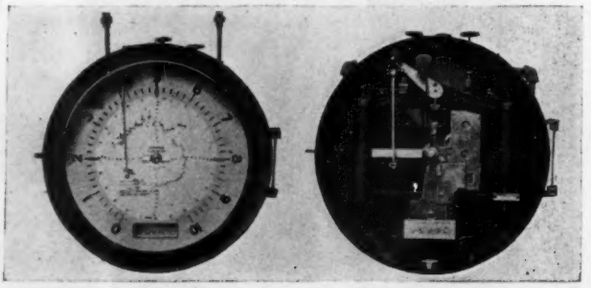
No. 138

The Electric Arc Cutting & Welding Co., 152 Jelliff avenue, Newark, N. J., has developed a tapered metallic electrode which it is claimed offers a solution of the heating problem of electrodes. The rod is designed to be gripped in the electrode holder by its larger end so that the smaller end may be used to start the arc. As the heat mounts up during the welding process, the constant and uniform increase in the thickness of the rod is said to provide heat compensation along its entire length. Thus it becomes unnecessary to change to a heavier rod as the heat increases. The gradually increasing diameter allows a corresponding increase in deposition with a constant heat value.

Designs Integrating Flow Meter

No. 139

The H. S. B. W.-Cochrane Corp., Philadelphia, has developed a new integrating flow meter, the deflecting and actuating member of which is a U-tube containing mercury and balanced upon a knife edge. Pressures from the two sides of a metering element, such as an orifice or nozzle in a steam line, are led to the two limbs of the U-tube through small, flexible torsion tubes placed close to the axis of rotation of the balance. The pressure differential set up by flow through the pipe line forces mercury from one side to the other side of the U-tube, causing the latter to tilt. In order that the tilting may be proportional to the rate of flow, the U-tube carries a cam which presses against a metallic ribbon kept taut by a weight. The meter has no working parts inside the pressure chambers and no stuffing box is required, consequently it is claimed there is little friction. The integrator used is driven solely by the clock, the deflecting member merely controlling the position of a stop pin.



work of irregular contour may be grasped without danger to the operator, an air control has been developed. It is operated by a single air valve each time a work spindle is indexed into the loading position. The control disengages the drive, applies a brake and releases the work. When the chuck has been reloaded, the air valve again is operated. It responds by gripping the jaws on the work, releasing the brake and engaging the drive with the spindle.

While air chucking relieves the operator from the fatiguing work of hand chucking, the greatest benefit is derived from the speed permitted by the power operation. It is said that in machining ball bearing cups and cones from alloy steel ring forgings, a production of 90 per cent of the theoretical index time of the machine has been done on a day's run.

The Cleveland Automatic Machine Co. has developed a multiple spindle machine designed along the general lines of its single spindle model. The turret, all of the cross slide tools except the threading tools, and the cams are the same.

The Steel Cities Hardware Co., Birmingham, Ala., has increased its capital stock from $20,000 to $1,000,000.

Hoover Organizes New Minerals Division

Washington, July 1.—With the view of offering maximum service to manufacturers and exporters of mineral commodities and metals, Secretary of Commerce Hoover directed that a new minerals division of the department of commerce be formed to include the present petroleum division and the minerals and nonferrous metals section of the iron and steel division. The new division has been formed at the suggestion of a number of American minerals and metal industries. Many features will be added to the new service.

Guy C. Riddell, of Rye, N. Y., consulting engineer, will be chief of the division. He served with the American Smelting & Refining Co. 12 years as superintendent of the East Helena smelter. For two years during the reorganization and modernization of plants and processes of the Austrian lead and zinc industry, undertaken by the Broken Hill Associated Smelters in 1912, Mr. Riddell was engaged in the direction of this work.

Mr. Riddell was metallurgical adviser to the United States tariff commission for two and one-half years. As a general manager of export and import business in New York, he obtained practical experience in the export field. He was secretary and New York manager of the Sino-American house, which exported machinery, ores, metals, chemicals and general merchandise. He was an incorporator and director of the first American corporation formed under the China trade act.

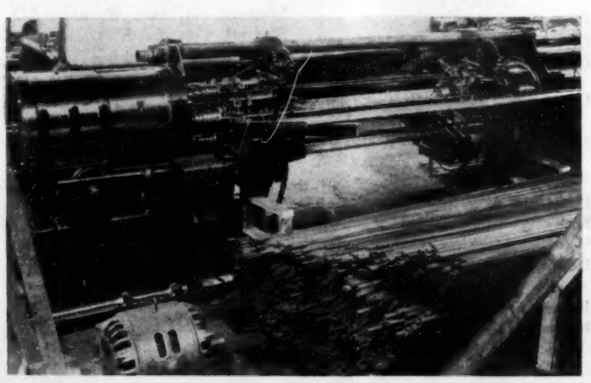
Mr. Riddell is a member of the Mining and Metallurgical Society of America, the American Institute of Metallurgical Engineers, the New York Metal exchange, and the Technology club, of New York. He is a graduate of the Massachusetts Institute of Technology.

Mr. Riddell will be assisted by J. J. Stader, who has been chief of the minerals and nonferrous section of the iron and steel division for some years. Mr. Stader was technical adviser to the interallied industrial council of central Europe after the war. For some time he was stationed in upper Silesia, where he made studies of the mineral resources and development and was afterwards technical adviser to Maj. Gen. Henry Allen, of the American forces on the Rhine, on Silesian problems with the allied supreme council. Mr. Stader is a native of the Joplin, Mo., mining district, and formerly was deputy governor of Sulu, and also served with the military forces of the United States in the Philippines.

Machine Threads Pipe Rapidly

No. 140

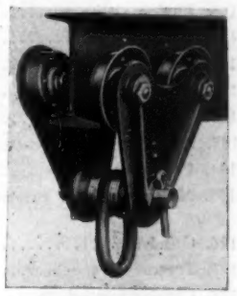
William K. Stamets, Pittsburgh, is announcing the development of a machine for threading pipe. It is claimed that so far as pipe threading is concerned, the machine is revolutionary. The tool is manufactured by the Davis & Thompson Co., Milwaukee. One size of the machine threads pipe from ½ to 2 inches nominal diameter and the other size from 1½ to 4 inches diameter. The double ended machine shown is adapted to standard conduit which is made in 10-foot lengths, although for random lengths a battery of two single ended machines would be needed. The six-station work spindle rotates in synchronism with the two six-spindle tool drums, one at either end of the machine. To realize the full productive possibilities of the machine it is said that a hopper or feeding chute should be used since the output is claimed to be 2400 ½-inch, 10-foot conduits per hour.



I-Beam Trolley Equalizes Load

No. 141

The Chisholm-Moore Mfg. Co., Cleveland, has brought out a ball-bearing oscillating type I-beam trolley, a feature of which is that the wheels have the bearings built in. The trolley weighs 17½ pounds and has but eight main parts. It handles loads up to 1 ton and is adaptable to any size I-beam from 4 to 7 inches, although by substitution of special separators it can be used with larger beams. The frame has an oscillating feature which distributes the load on all four wheels. With a swivel loads can be swung in a circle.



Wrench in Constant Adjustment

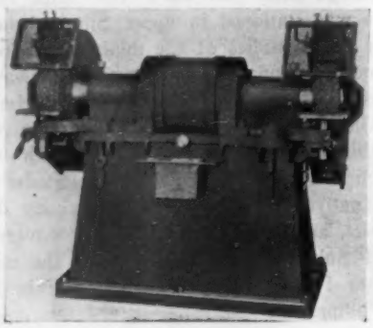
No. 142

The Speednut Wrench Corp., 20 East Jackson boulevard, Chicago, has placed on the market a new type of wrench consisting of three parts. These parts are made of forged carbon steel, are heat treated and polished. The principle upon which it operates is such that the greater the pull exerted on the wrench, the tighter the grip offered. A mechanism for opening and closing the jaws allows it to be ratcheted rapidly. A spring attached to the movable jaw and fastened to the handle aids to keep the jaws in constant adjustment, however, the wrench operates without the spring, consequently it may be detached if desired. The wrench is made in 8 and 6-inch sizes, taking 5/16 to ¾-inch and ⅛ to 7/16-inch nuts respectively.

Introduces Floor Grinder

No. 143

The Cleveland Armature Works, Inc., Cleveland, has placed on the market a heavy-duty floor grinder, the principal features of which are ease of manipulation, electric drive and taper roller bearings. The machine is made in two sizes with 10 and 15-horsepower motors respectively and for wheels of 18-inch diameter and 3-inch face or 20-inch diameter and 4-inch face. The base is steel and cast iron electrically welded and is filled with concrete to absorb vibration. The motors are built particularly for grinding work and have windings thoroughly insulated and treated with an oil-proof compound. Stator rings and steel tie rods are electrically welded before machining. The rotor bars and rings also are welded, while the stator laminations are exposed to the air to reduce heating in carrying overloads. Large fans, one at each end of the motor, also promote cooling. Safety features have been given careful consideration. The electric control operates in oil so that no live parts are exposed. Starting and stopping of the machine is accomplished with a knob within easy reach of the operator. The wheel spindle is 34 inches from the floor.



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Continuing Repair Service on Obsolete Products

The subject of when tools and patterns become obsolete has been exhaustively studied by a committee of the Electric Power club, B. F. Keith building, Cleveland. The obligation of the manufacturer to his customers, the present practice regarding the scrapping of obsolete tools and patterns, and the customer's obligation to the manufacturer have been considered in the report of the committee, which was unanimously adopted by the club at its recent annual meeting. An abstract of the report follows:

"The ethics of modern business seem to recognize the principle that the manufacturer assumes an implied responsibility for holding himself in readiness to furnish such usual repair and supply parts for any machine or machinery built and sold by him, as will probably be needed by his customers, at reasonable prices and on prompt deliveries. This constant change with the implied obligation imposes a constantly increasing burden upon the manufacturer. The more active and progressive he is in adopting improvements and enlarging his lines, the greater becomes his difficulty and expense in providing and maintaining that service. Correspondence with manufacturers in various lines indicates that it is usual practice to continue provision for the prompt supply of repair parts for periods ranging from three to five years beyond the time at which machines have been superseded. Nearly all are prepared to furnish such parts for an indefinite period after the machine themselves are no longer manufactured but on such shipment and at such prices as are applicable to job work.

"It seems to be fairly general opinion that the frame patterns and in addition such other patterns and special tools used in the manufacture of motors, generators, etc. as are not particularly expensive or complicated, but require relatively large space for storage, may be discarded at the end of a two or three-year period, after a given type of motor, generator, or control has been superseded. Possibly the obligation of a manufacturer to supply repair and renewal parts promptly and at prices based on manufacturing in reasonable quantity may cease within three or at most five years after a line becomes obsolete, but he should still be prepared to give such service on the basis of less prompt deliveries and prices commensurate with the cost of "making" rather than manufacturing the required parts until the demands for repairs or renewals have sunk to negligible proportions."

At eight of its plants during April, 1924, the American Sheet & Tin Plate Co. had no lost-time accidents while five others had one lost-time accident each. The plants in the first group included Cambridge, Dover, Crescent, Leechburg, Mercer, Canton, Wellsville and Wood, while those in the second group are Aetna Standard, Guernsey, New Castle, Sabraton and Scottdale.

Puddling Wage Rate Reduced 50 Cents

Puddlers' wages in July and August will be $12.63 per ton compared with $13.13 in May and June. Wages in bar mills affiliated with the Western Bar Iron association will be lower, as the result of a reduction in the average sales price of bar iron in May and June, from 2.35c to 2.25c per pound. This was determined by representatives of the association and the Amalgamated Association of Iron, Steel and Tin Workers in Youngstown, June 26. This was the first reduction in average sales price since the November-December period. Puddlers' wages in 1914 averaged $5.60 per ton, and the peak was $18.76 in January and February, 1921. Following is a comparison of average sales prices on which bar mill wages are based:

	1924	1923	1922	1921	1920
Jan.-Feb. ..	2.35c	2.25c	1.60c	2.80c	2.55c
Mar.-April .	2.35c	2.35c	1.50c	2.35c	2.70c
May-June ..	2.25c	2.50c	1.60c	2.30c	3.00c
July-Aug. ..	.....	2.50c	1.70c	1.85c	3.25c
Sept.-Oct. ..	.....	2.40c	1.95c	1.70c	3.40c
Nov.-Dec. .	.....	2.35c	2.20c	1.65c	3.55c
Yearly av.	.....	2.39c	1.76c	2.14c	3.08c

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No.		Issue
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102.	Car wheel	6/5
34.	Cylinder	3/6
23.	100-inch	3/6

Broaching Machines

No.		Issue
71.	Broaching fixture	5/1

Drills

No.		Issue
60.	Air motor	4/3
66.	Air motor	4/3
78.	Automatic	5/1
63.	Gang	4/3
53.	3-way, horizontal	4/3
90.	Tapping machine	5/1
45.	Vertical	4/3

Grinders

No.		Issue
35.	Abrasive belt	3/6
62.	Abrasive belt	4/3
135.	Abrasive belt	7/3
83.	Bench	5/1
136.	Bench	7/3
81.	Cylindrical	5/1
50.	Die	4/3
117.	Disc	6/5
14.	Drill	2/7
1.	Gear	2/7
30.	Face	3/6
143.	Floor	7/3
77.	Hob	5/1
111.	Internal	6/5
115.	Portable	6/5
25.	Surface	3/6
47.	Surface	4/3
56.	Swing frame	4/3
104.	Swing frame	6/5
36.	Tool	3/6
89.	Tool	5/1
126.	Tool room	7/3
54.	Tool, universal	4/3
73.	Universal	5/1

Hobbers

No.		Issue
13.	Gear	2/7
70.	Spline, 8 spindle	4/3

Lathes and Automatics

No.		Issue
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125.	Automatic	7/3
42.	Bar machine	3/6
128.	Chucking	7/3
93.	Chucking, 4 spindle	6/5
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26.	Hoist	3/6
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55.	Tractor	4/3
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5.	Truck	2/7
6	Truck	2/7
17.	Truck	2/7
120.	Truck	7/3

Milling Machines

No.		Issue
110.	Column facer	6/5
52.	Hand	4/3
108.	Production	6/5
10.	Slab	2/7
33.	Universal	3/6
105.	Thread	6/5

Pipe Machinery

No.		Issue
3.	Threader and cutter	2/7
64.	Threader and cutter	4/3
140.	Threader	7/3

Planers

No.		Issue
84.	120-inch	5/1

Presses, Brakes, Etc.

No.		Issue
59.	Baler, scrap	4/3
130.	Bending press	7/3
129.	Bending rolls,	7/3
133.	Blanking and edging press	7/3
74.	Brake, sheet metal	5/1
18.	Hinge brake	2/7
12[illegible]	Press for ax heads	7/3
21.	Straightener	2/7
41.	Straightener	3/6
48.	Straightener	4/3
88.	Straightener, wheel	5/1
46.	Trimming	4/3

Punches, Shears and Riveters

No.		Issue
32.	Hydraulic riveter	3/6
123.	Punch and bar cutter	7/3
85.	Punch and shear	5/1
113.	Punch and shear	6/5
134.	Punch	7/3
86.	Punch, multiple	5/1
100.	Riveting device	6/5
134.	Shears	7/3
22.	Suspension device	3/6

Saws

No.		Issue
106.	Band	6/5
132.	Band, metal	7/3
2.	Friction saw	2/7

Shapers

No.		Issue
95.	Tool room	6/5
119.	Heavy duty	7/3

Slotters

No.		Issue
116.	Planer type	6/5

Small Tools

No.		Issue
16.	Gage, dial	2/7
28.	Gage, dial	3/6
79.	Level, precision	5/1
44.	Parallels	3/6
80.	Reamer, expanding	5/1
103.	Tap, rotary	6/5
29.	Taps	3/6
12.	Vise	2/7
142.	Wrench	7/3
7.	Wrench, pipe	2/7

Welding Equipment

No.		Issue
107.	Arc welder	6/5
67.	Cutting torch tip	4/3
138.	Electrode	7/3
20.	Electrode holder	2/7
39.	Electric welder	3/6
40.	Welding torch	3/6

Miscellaneous

No.		Issue
92.	Air compressor	6/5
122.	Air compressor	7/3
51.	Coupling, flexible	4/3
43.	Flow meter	3/6
139.	Flow meter	7/3
19.	Forge	2/7
101.	Forging furnace	6/5
72.	Furnace, aluminum	5/1
58.	Gate valve	4/3
15.	Lamp guard	2/7
31.	Melting pot	3/6
82.	Microscope attachment	5/1
27.	Molding machine	3/6
112.	Molding machine	6/5
11.	Motor mounting	2/7
114.	Motor bearing	6/5
96.	Motor starter	6/5
61.	Motors, induction	4/3
37.	Oil separator	3/6
87.	Reflector, lamp	5/1
8.	Periscope	2/7
97.	Resistance grid	6/5
68.	Roller leveler	4/3
75.	Sandblast unit	5/1
76.	Sand mixer	5/1
49.	Spray gun	4/3
91.	Stair tread	5/1
98.	Vacuum pump	6/5
69.	Vibrating screen	4/3

Brick Stocks Grow

Silica Hurt More Than Fire Clay in Slump of Demand

Pittsburgh, July 1.—That the silica brick industry has suffered more in proportion than fire clay brick is indicated by data compiled and issued for May by the Refractories Manufacturers' association. While production of fire clay brick declined 5 per cent from 79 in April to 74 per cent in May, production of silica brick went down 11 per cent from 63 per cent in April. While shipments of fire clay declined 4 per cent, going from 72 to 68 per cent in May, shipments of silica went down 14 per cent from the 64 per cent rate in April. Net new business in fire clay brick in May was on the basis of 55 per cent of the capacity reporting, as against 71 per cent in April, a decline of 16 per cent, while in silica net new business went down from 51 per cent in April to 28 per cent in May, a decline of 23 per cent. Detailed figures are given in the accompanying tables:

FIRE CLAY

	May 31, 1924	Apr. 30, 1924
Capacity reporting	52,632,300	52,632,300
On hand last day preceding month	145,028,667	141,345,102
Production	39,417,556	41,966,199
Shipments	36,156,470	38,282,634
On hand last day current month	148,289,753	145,028,667
New orders received during month	29,764,141	38,308,366
Cancellations	499,928	767,891
Net New Business	29,264,213	37,540,475
Unfilled orders last day current month	47,473,640	54,365,887

SILICA BRICK

Capacity reporting	8,019,667	8,019,667
On hand last day preceding month	12,809,907	12,950,174
Production	4,213,439	5,045,843
Shipments	4,038,570	5,186,110
On hand last day current month	12,984,776	12,809,907
New Orders received during month	2,230,363	4,122,765
Cancellations	7,693	7,900
Net new business	2,222,670	4,114,865
Unfilled orders last day current month	6,900,620	8,717,420

The apparent difference between stocks on hand May 31 and the unfilled orders of that date is explained by the fact that stock on hand includes special shapes made up in advance of the receipt of orders. These are for regular customers and are in no sense free for open market sales. The actual stock of fire clay by grades in 9-inch straights on May 31 was 65,528,777, while in silica the stock on hand the last day of May for open market selling amounted to 2,274,788 brick.

Armco International in New London Office

London, June 24.—The Armco International Corp. which has been organized to take over the export business of the American Rolling Mill Co., Middletown, O., has opened its offices in London in charge of W. Walker Lewis and Capt. R. Terrell. Mr. Lewis has come to England after a long experience with the American Rolling Mill Co. in the United States. Capt. Terrell is a member of parliament who has been prominently connected with the British engineering trade for many years.

As previously announced, the new British offices of the Armco International Corp., are at Pinners Hall, Old Broad Street, London, E. C. The company has made arrangements with the Shelton Iron, Steel & Coal Co., Ltd., Stoke-on-Trent, and the Scottish Iron & Steel Co., Ltd., Glasgow, to produce for it a large proportion of the ingot iron products which will be sold in the United Kingdom. These companies have been producing ingot iron for several years under license from the American Rolling Mill Co. The Scottish Tube Co., Ltd., Glasgow, and the Whitecross Co., Warrington, will continue to make ingot iron pipe and wire respectively. All of these operations will be consolidated under the general direction of the British branch, which will also have general charge of sales and promotion of ingot iron in Great Britain and will serve as a liaison organization making the experience and facilities of the American company even more readily available to British producers of these products than heretofore.

Lower Fuel Price Cuts Cost of Living

The cost of living in the United States on May 15, 1924 had decreased three-tenths of 1 per cent from the level of April 15, 1924, the National Industrial Conference board reports. The most important change within the month was a decrease of approximately 2 per cent in fuel prices. This was occasioned mostly by decreases for bituminous coal in regions where the coal is an important domestic fuel. In the East, where anthracite is used almost exclusively for domestic purposes, there were no decreases reported for anthracite, and decreases for anthracite in other parts of the country were not important. Between July, 1920, when the peak of the rise in the cost of living since 1914 was reached, and May, 1924, the cost of living decreased 21.1 per cent. The increase in the cost of living since July, 1914, was 61.4 per cent.

The purchasing value of the dollar, based on the cost of living in May, 1924 was 62 cents as contrasted with $1 in July, 1914. The accompanying table gives further comparisons of cost of living items.

Living Costs Compared

July, 1914 to	All items	Foods	Shelter	Clothing	Fuel and light	Sundries
Jan., 1923	58.1	44	67	60	87	71
Feb., 1923	57.5	42	67	62	87	71
Mar., 1923	59.2	42	70	68	86	73
Apr., 1923	59.1	43	70	67	80	73
May, 1923	60.3	43	72	74	78	73
June, 1923	60.1	44	72	69	78	73
July, 1923	61.9	47	75	70	76	73
Aug., 1923	61.6	46	75	71	76	73
Sept., 1923	63.4	49	75	75	76	73
Oct., 1923	64.1	50	75	76	78	73
Nov., 1923	65.3	51	80	74	76	74
Dec., 1923	65.0	50	80	75	76	74
Jan., 1924	64.6	49	80	76	75	74
Feb., 1924	63.9	47	80	77	75	74
Mar., 1924	63.2	44	85	76	72	74
Apr., 1924	61.8	41	85	77	68	74
May, 1924	61.4	41	85	76	65	74

Structural Institute Adds Many Members

A progress report issued by Charles F. Abbott, executive director, of the American Institute of Steel Construction, announces that during the past few months the institute has built up a substantial and representative membership. To insure an enthusiastic interest in addition to membership, meetings were arranged and held in Philadelphia, Massillon, O., Cincinnati, Detroit, Chicago, Birmingham, Ala., St. Louis, Kansas City, Omaha, Neb., Minneapolis, Milwaukee and Montreal. In most of these cities, two or more meetings were held, generally one in the afternoon attended by fabricators and a dinner-meeting at night to which prominent architects, engineers, contractors, building commissioners, steel mill representatives and press representatives were invited.

All of these meetings were addressed by Mr. Abbott, executive director, and Lee H. Miller, chief engineer of the institute, who presented information pertaining to the fabrication and erection of structural steel. Mr. Abbott stated in the progress report that the adoption of the institute's standard specifications is being extended rapidly. A standard code of practice has been distributed for suggestions preparatory to final printing. Progress was also reported on the preparation of the standard handbook. The annual meeting of the institute will be held at French Lick, Ind., Nov. 13-16.

Spanish Trade Expanding

Washington, July 1.—Increased interest in quotations on railroad and structural steel in the Spanish market is reported by Assistant Trade Commissioner Burke, Madrid. The blast furnaces in the Bilbao district are running nearly at capacity with the result that plans are being considered for putting the old furnaces into condition and even for constructing new ones. Considerable optimism is shown with regard to the German market, due to the increasing number of requests for information from that source. Spain enjoys considerable favor in the German metal market.

Draw First Coke from New Clairton Ovens

Pittsburgh, July 1.—First drawings of by-product coke from the newly installed by-product coke ovens at the Clairton plant of the Carnegie Steel Co., were taken last Friday afternoon. The plant had been under construction nearly two years and is classed as one of the largest pieces of construction work of its kind carried on in this district since the building of the original by-product coke plant at Clairton.

The new plant began operation six years to a day from the time the original plant was put into operation. It consists of 366 ovens arranged in six batteries of 61 ovens each and has a capacity to carbonize 8500 tons of coal a day. It will produce daily 6000 tons of coke, 55,000,000 cubic feet of gas, 90,000 gallons of tar, 215,000 pounds of ammonium sulphate, and 25,000 gallons of benzol products.

With the newly completed addition, the by-product plant at Clairton is the largest in the world, according to officials of the company. The total number of ovens, with the extensions, is 1134. The newly finished ovens embrace many radial improvements. Joseph Becker, consulting engineer of the Koppers Co., is the inventor of the ovens, which were first introduced into this country in 1922.

Reorganize Troy Foundry

Reorganization of the Troy Foundry & Machine Co., Inc., Calonie, N. Y., is under way, bondholders having agreed to a plan submitted by creditors. Additional resources are to be provided and a new management. A sale has been ordered so that the receivership may be terminated and the reorganization completed. The creditors committee plans to buy the assets and continue to operate it as a going concern. The sale will not interrupt operations, being simply a necessary step in the reorganization. Plans are also under way to extend the facilities of the company.

Wholesale Prices Decline

Washington, July 1.—Index price numbers of metals and metal products dropped five points in May, according to information gathered in representative markets by the department of labor, indicating that the downward swing of general wholesale prices, which developed late in 1923, continued last month. The index number of building materials prices dropped only two points; farm products dropped three points, cloths and clothing dropped two points; fuel and lighting, two points, miscellaneous, one point; all commodities, one point; and toods remained unchanged.

News of Societies

Past and Coming Meetings of National and Local Trade and Technical Organizations

RICHARD PETERS JR. has been elected chairman of the Philadelphia section of the American Institute of Mining and Metallurgical Engineers, succeeding Dr. Henry S. Drinker. Louis C. Madeira, 3rd, has been elected secretary to succeed Mr. Peters. Mr. Peters is a member of Robert C. Lea & Co., Stephen Girard building, Philadelphia, and Mr. Medeira is assistant to the president of Madeira, Hill & Co., Philadelphia. Headquarters of the Philadelphia section of the American Institute of Mining and Metallurgical Engineers are at the Engineers club, Philadelphia.

* * *

Gear Makers Will Meet

Announcement has just been made that the American Gear Manufacturer's association will hold its semiannual meeting Oct. 16-18. Briarcliff Lodge, Briarcliff Manor, Westchester county, N. Y., has been chosen for the meeting.

* * *

New Association Is Formed

The first annual convention of the New England Regrinder association was held at the Hotel Bancroft, Worcester, Mass., June 23. Delegates from all parts of New England were present and took part in the first election of the newly formed branch of the National Regrinders association. Stanley Dewslap, Springfield, Mass., was elected president; H. M. Polley, vice president; J. C. Raymond, Greenfield, Mass., secretary and W. S. Mower, Windsor, Vt., treasurer. The purpose of the national association is to standardize business practices, establish uniform cost system, and to improve conditions for those engaged in the industry.

* * *

To Discuss Human Relations

The fourth annual week-end conference on human relations in industry under the auspices of the international committee of the Y. M. C. A. will be held at Estes park, Colorado, July 18-20. This will be followed by a school for industrial, railroad and business executives, July 21-26. "The State and Industrial Relations" will be the subject of an address by Henry J. Allen, former governor of Kansas, July 18. "Personal Achievement in Industry" is the title of an address by Harry N. Clarke, president, the Corte-Scope Co., Cleveland. There will be a number of other addresses by employers, students of industrial problems and representatives of organized labor. Several lectures are announced for the school, for which there is a nominal tuition fee.

* * *

Purchasing Agents Choose Officers

W. T. Hall, purchasing agent of Brewster & Co., New York, was elected president of the Purchasing Agents' association of New York at the recent annual meeting. Other officers elected were: First vice president, A. Fred Macklin, Consolidated Gas Co., New York; second vice president, A. Eberhardt, Sperry Gyroscope Co., Brooklyn; treasurer, E. B. Fielis, New York & Queens Electric Light & Power Co.; executive committee, A. A. Hoffman, American Oil & Supply Co., Newark, J. R. Maust, W. J. Rainey Co., Inc., New York. Other members of the executive committee are: J. Shipman, Neptune Meter Co., Long Island City, chairman; J. J. Collins, New York Dock Co., Brooklyn; J. W. Gaskill, John A. Roebling's Sons Co., Trenton, N. J.; W. L. Parker, Edison Lamp Works, Harrison, N. J.

Convention Calendar

Sept. 15-18—New Haven Machine Tool Exhibit. Annual meeting and exhibition, Mason laboratory, Yale university, Prof. S. W. Dudley, Mason laboratory, Yale university, New Haven, Conn., is secretary.

Sept. 22-26—American Society for Steel Treating. Annual convention and exhibition, Commonwealth Pier, Boston. W. H. Eisenman, 4600 Prospect avenue, Cleveland, is secretary.

Sept. 29-Oct. 3—National Safety Council. Annual safety congress, Louisville, Ky. W. H. Cameron, 168 North Michigan avenue, Chicago, is secretary.

Oct. 13-16—American Foundrymen's association. Annual convention and exhibition, Auditorium, Milwaukee. C. E. Hoyt, 140 S. Dearborn street, Chicago, is secretary.

Oct. 16-18—American Gear Manufacturers' association. Semiannual meeting at Briarcliff Lodge, Briarcliff Manor, Westchester county, N. Y. T. W. Owen, 2443 Prospect avenue, Cleveland, is secretary.

Study Metal Corrosion Problems

American Society for Testing Materials, in Annual Meeting Studies Corrosion, Heat and Electrical Resistance Properties—Methods of Testing Outlined—Attention Directed to Gray Iron with Particular Reference to Pipe Castings

PREDOMINANT among the important questions considered through the medium of papers, committee reports and discussion at the twenty-seventh annual meeting of the American Society for Testing Materials, held in Atlantic City, June 24-27, was the resistance of metals to corrosion. This subject studied in conjunction with heat and electrical resistance properties, occupied attention of two entire sessions and as applied to nonferrous metals marked a third meeting.

In summarizing the line of investigation pursued, Jerome Strauss, U. S. naval gun factory, Washington, chairman of the committee appointed to advise with the papers committee on a symposium on corrosion, heat and electrical resistance alloys, offered a tabulation of manufacturers' data on such alloys. Short-time tests, standardized to a degree through the bureau of standards and other government and private agencies, were criticized, but opinion was advanced that these rapid tests at a later date may be checked against the long-time tests being made.

Committee A-5 on corrosion of iron and steel presented a report covering the progress of tests being made on heavy and light gage and galvanized sheets exposed to atmosphere or immersed in various sections of the country and upon accelerated tests of similar materials. A sectional committee composed of the various organizations interested is contemplated to prepare specifications on zinc coated materials of various classes. Proposed tentative specifications for hot-dipped galvanized sheets were presented.

"What is steel?" a question capable of many answers, was taken as a theme for the annual address of President Guilliaem Aersten, Bethlehem Steel Co., who noted that more than 80 specifications put forth by the society cover iron and steel while the remainder, numbering about 160, are concerned with the other engineering materials.

The election of the following officers was announced at the Wednesday night session: President, F. M. Farmer, Electrical Testing Laboratories, New York; vice president, J. H. Gibboney, Norfolk & Western railway, Roanoke, Va.; members of the executive committee, William Campbell, Columbia university, New York, A. E. Jury, United States Rubber Co., New York; Anson Marston, Iowa State college, Ames, Ia., and John A. Mathews, Crucible Steel Co. of America, New York.

The meeting was the second in point of attendance, a total registration of 966 being reported at the closing session. Special entertainment features were in charge of a committee headed by W. M. Corse. M. M. Upson, Raymond Concrete Pile Co., New York, was awarded the cup and medal as A. S. T. M. golf champion, while prizes for low net scores were awarded to J. H. Chubb, Universal Portland Cement Co., Chicago, J. H. Young, Mellon Institute of Industrial Research, Pittsburgh, and A. F. Braid, Metal & Thermit Corp., New York. A. G. Blakely, Philadelphia & Reading Coal & Iron Co.. Pottsville, Pa., won the tennis tournament with L. P. Nemzek, E. I. DuPont de Nemours & Co., Philadelphia, runner up.

Considerable interest was evidenced in a group of papers and reports on cast iron pipe presented at the closing meeting on Friday night. Recent developments in manufacturing methods comprising metal or sand mold centrifugally cast pipe have introduced new problems, and users through such organizations as the American Waterworks association and the American Gas association have requested the formation of a sectional committee to investigate methods of testing with a view to possible changes in the specifications for cast iron pipe, soil pipe and fittings.

Sulphur Occupies Center of Interest

SULPHUR and its effect upon physical properties, a theme of recurrent interest at meetings of the society, was brought forward at the Thursday morning session. The report of the joint committee made up of representatives of the bureau of standards, A. S. T. M., the national research council, association of American Steel Manufacturers, Steel Founders Society of America, American Foundrymen's association and other interested groups, was presented in several sections. A resume of the work of this committee was presented by Chairman Burgess.

Further material on the metallographic investigation of the effect of sulphur on rivet steel was offered and a preliminary report on an investigation of sulphur effect on structural steel was presented. The latter outlined a study of six heats of 0.20 per cent carbon steel bearing residual sulphur in the range from 0.03 to 0.08 per cent. Specimens have been tested by the Watertown arsenal and by the naval engineering station, and tension, yield point, elongation, impact, hardness and bending results have been charted.

In the discussion which followed, E. E. Thum suggested that the user is indifferent to sulphur as long as physical tests are satisfactory. Further he said, poor results may be because of carelessness in steelmaking, and that an examination of the literature on the effect of sulphur indicates other deleterious agents are present which perhaps are not as easily evaluated as is sulphur. He advised a study of manufacturers' methods, a plotting of physical tests against manganese, carbon and, perhaps, manganese plus sulphur. He doubted the value of sulphur prints in showing sulphur and defined the sulphur study as a test of methods of testing as much as a determination of final results.

The report of committee A-1 on steel, offered by F. M. Waring, chairman, and embodying revisions in steel pipe, rails, rivet steel, carbon-steel wheels, boiler tubes, steel castings and structural steel for various purposes was adopted with one exception. A disagreement as to

the tolerance on excess of actual over nominal weight of individual plates led to remanding a note on the table of permissible overweights to the committee for further consideration. This action was taken on recommendation of a number of railway users, and applies to structural steel for locomotives, cars, bridges and buildings. The difference is taken to be one of interpretation of existing practice.

Standardization for Small User

Great interest was aroused by a paper by Thomas H. Wiggan, New York, on the need of the small user for the benefits of the standardization work of the society. Mr. Wiggan pointed out that the large consumer of engineering materials may insist upon compliance with specifications on the part of the manufacturer. This privilege in many cases is denied to the buyer of small lots. He cited instances of materials being sold in small lots to lesser individual users after being rejected on test by the large customer. He advised a more constant recognition of and emphasis on the standards set up after deliberation of the A. S. T. M. and the more general adoption of short designations for marking goods after individual test to show them to be of the grade specified by standard classification.

The problem was discussed at length and referred to the executive committee for action.

R. H. Smith presented an interesting paper on high tensile strengths obtainable from steels of less than 0.15 per cent carbon content. He stated it is possible to obtain a tensile strength in excess of 90,000 pounds without brittleness from metal of this analysis.

A proposed revised tentative recommended practice for the heat treatment of carbon steel castings was presented by committee A-4. In presenting this report, John Howe Hall, secretary, mentioned the appointment of new sub-committees on the heat treatment of gray cast iron and malleable iron.

Reports Methods of Testing

Testing, a problem brought forward for intensive study at the meeting in June, 1923, composed the central theme of a meeting held Thursday night. Revised methods for verification of testing machines were advanced to standard, while tentative methods of tension testing metallic materials and revision of terms defining brinell hardness and compression testing were offered. T. M. Jasper, University of Illinois, Urbana, Ill., described an investigation for determining Poisson's ration and the use of this ratio for stress analysis. Magnetic tests and the study of ferrous and nonferrous metals under various fatigue tests were reported in a series of papers delivered Friday morning. The committee A-6 recommended for advance to standard a revised method for testing the magnetic properties of iron and steel.

Nickel and Chromium in Ferrous Metals

A SYMPOSIUM on corrosion-resisting, heat-resisting and electrical-resistance alloys featured the first session of the meeting held Tuesday morning. A paper by P. A. E. Armstrong, vice president, Ludlum Steel Co., Watervliet, N. Y., reviewed metallurgical developments that have produced the chromium bearing alloys. The author explained that corrosion resisting metals of the past were nonferrous. Bronze and copper alloys generally antedated ferrous alloys. However, evidence has been obtained which demonstrates that iron and steel were known many years prior to their supposed date of origin. At this present age, iron with high percentages of chromium is the typical rustless iron.

A paper by R. J. Anderson, Boston, Mass., and G. M. Enos, United States bureau of mines, pointed to the importance of the corrosion problem to the coal mining industry. D. J. McAdam Jr., United States naval engineering experiment station, Annapolis, Md., presented a paper giving the results of an investigation at the United States naval engineering experiment station in which endurance tests were made by the rotating cantilever method and by the alternating torsion method and the endurance properties thus obtained compared with results of static tension and tortion tests.

Nonrusting, chromium-nickel steels were outlined by B. Strauss. He described the valuable properties of chromium as an alloy with iron and steel. The results of corrosion tests on the chrome-nickel alloys were discussed and a number of diagrams shown demonstrating the change of elongation at advanced temperatures of highly alloyed chromium-nickel steels, and soft steels, together with various micrographs showing the different structures.

A paper prepared jointly by Jerome Strauss, material engineer and J. W. Talley, assistant chemist, United States naval gun factory, Washington, set forth tests for the determination of the physical characteristics, and behavior of approximately 30 commercial corrosion-resistant steels in over 20 distinct compositions when subjected to sea water spray. Observations concerning their behavior in tension, hardness, impact and salt-spray corrosion testing were made on samples subjected to a variety of heat treatments. The materials used for test purposes were arranged arbitrarily in three groups as follows: Hardenable chromium steels; chromium steels that do not harden; steels in which the predominating alloying element is nickel.

Ball Bearing Materials Compared

S. A. Christiansen read a paper by Axel Hultgren in which the author laid stress upon the contrasting qualities of ball bearing materials. Commonly steel containing 1.0 per cent carbon and 1.5 per cent chromium and hardened to about 650 to 700 brinell is used. With the discovery of stainless steel and when it was found that this material could be hardened to the required degree, manufacturers naturally turned to it for the solution of the rust problem.

Continuing the symposium on resistance of alloys to corrosion, heat and electrical currents at the evening session, with G. K. Burgess, director of the United States bureau of standards and past president of the American Society for Testing Materials presiding, F. A. Fahrenwald, Cleveland, defined the various properties grouped under the general heading of heat resistant. Much so-called heat resistance in fact is oxidation resistance. He stated that chromium, the element usually present in alloys of this classification, is readily oxidized, but in this state, it forms an effective shield against further inroads, and becomes in fact resistant. The commoner forms of heat resisting metals contain chromium, nickel or cobalt. He compared the action of ferrous metals under steadily rising temperature to copper, aluminum, lead and mercury, stating that the physical properties of each of the latter are assumed in turn by the iron or steel subjected to higher temperatures.

In mentioning the practical applications of his theory of heat resistance, Mr. Fahrenwald stated that annealing boxes usually fail, not because a critical point is reached or passed, but because the boxes are heated and cooled alternately above and below the range where the physical properties of the alloy are affected, with warping and breaking resulting as a cumulative effect. He dwelt upon the chemical resistivity at higher temperatures, and the effect of heat

transmission within the metals which had been studied.

M. A. Hunter, Driver-Harris Co., Newark, N. J. traced the development of high resistance alloys under stimulus of increased interest in electrical heating. He classified these alloys according to their adaptibility for use under various ranges of temperature, outlining them on a basis of their nickel content, and giving tables and graphs illustrating their chemical and working temperature characteristics. The study was made by Mr. Hunter and A. Jones, Rensselaer Polytechnic institute.

A study of all conditions which must be met by alloys destined for high temperature-pressure duties was presented by C. E. MacQuigg, Union Carbide and Carbon Research Laboratories, Long Island City, N. Y. The desirable properties of such alloys are good casting qualities, machineability, forgeability, immunity to destructive agencies and strength. Alloys of iron and chromium are favored because of their cheapness and their ability to meet these requirements. Particular reference was made by Mr. MacQuigg to an alloy of from 25 to 30 per cent chromium, fractional percentages of silicon and manganese and the remainder iron. Excellent machineable castings may be made from alloys containing up to 1.5 per cent carbon and above this amount the castings require heat treatment. Chromium results in a less fluid metal and over 20 per cent chromium imparts a creamy consistency to the melted metal, making it difficult to cast. Higher carbon reduces this effect. Castings made from chromium bearing metal vary in tensile strength from 65,000 to 90,000 pounds per square inch. With 2.75 per cent carbon the brinell hardness reaches 550 to 600 in sand cast alloys, and brittleness encountered in white iron is entirely absent. The reason for this property was explained through micrographs.

A paper by J. B. Johnson and S. A. Christiansen explained the conditions encountered in making exhaust valves for airplane engines. F. E. Bash discussed the results of tests in which the thermo-electric properties of a number of alloys were determined against copper as a standard material.

Present Outline of Corrosion Testing

AT THE fifth session held Wednesday morning, June 25, G. H. Clamer, Ajax Metal Co., Philadelphia, past president of the A. S. T. M. presiding, an interesting discussion arose as to the value of accelerated tests on corrosion of metals. It was the general opinion that the long time tests give the more reliable data although the accelerated tests have proved to be of a definite value in preliminary work.

J. H. Gibboney, Norfolk and Western railway, Roanoke, Va., chairman of committee A-5, presented the committee's report covering the corrosion of iron and steel. This committee which was composed of a number of sub-committes dealt with the inspection of uncoated sheets exposed to atmospheric corrosion, and on total immersion tests reporting failures of light gage sheets immersed in city water at Washington, D. C., and in salt water at Annapolis, Md. Specifications were submitted for hot dipped galvanized sheets. A program was outlined for the investigation of a number of accelerated tests, and exposure tests of metallic-coated products treated by various commercial processes.

Photography Not Testing

Report of committee E-4 on metallography was read by the chairman W. H. Bassett, American Brass Co., Waterbury, Conn. This committee report showed that the members were unanimously of the opinion that photography should not be considered as part of metallographic testing, but only as a means of making a record of the tests. This committee recommended for advancement to standard, methods for metallographic testing of iron, steel and nonferrous metals, and alloys together with practice for photography as applied to metallography and revised definitions of terms used relating to metallography. A critical bibliography of etching methods was covered in this report.

An interesting paper prepared by H. S. Rawdon, A. I. Krynitsky, bureau of standards, Washington, D. C., and W. H. Finkeldey, New Jersey Zinc Co., Palmerton, Pa., described the various types of apparatus for carrying out simple immersion tests; repeated immersion tests; interrupted repeated immersion tests in which the specimen is permitted to dry between two successive immersions; tests in which the specimen is exposed to the spray of the corrosive medium, and tests consisting of a combination of a series of exposures the entire cycle simulating ordinary weather conditions. The apparatus used in conducting these tests were shown by numerous stereopticon illustrations.

F. N. Speller, National Tube Co., discussed the limitations of the accelerated tests and advised their classification into distinct groups so as to eliminate expense and simplify results.

W. G. Whitman, Massachusetts Institute of Technology questioned the relative values of results obtained by the accelerated tests and long time tests by calling attention to the great difference in these results. W. H. Findeldey spoke of the causes of failure of galvanized iron coatings when subjected to the accelerated tests which were not consistent with the results obained by the long time tests.

Harry Y. Carson, American Cast Iron Pipe Co., Birmingham, Ala., brought up the point that there should be similarity between the results obtained by the accelerated tests and the long time tests, otherwise the accelerated tests would be of little value in determining the merits of different materials. Film formations caused by corrosion also were discussed at this session, as such formation retarded the corrosive action of the different solutions on the various metals and alloys submitted to tests.

Cast Pipe Holds Interest

Great interest was shown at the final session of the twenty-seventh annual meeting held Friday evening, June 27, on wrought iron and cast iron, which centered in the development of suitable specifications for cast iron pipe. Within recent years this subject has been given considerable attention by engineers and manufacturers. The physical tests called for in existing standard specifications have been studied with a view to raising the requirements. More recently the possibility of a broad program of standardization of cast iron pipe under the procedure of the American Engineering Standards committee in conjunction with the American Society for Testing Materials, American Gas Association and the American Waterworks Association had made it particularly opportune to arrange for a general discussion of the quality of the material. The committee on papers accordingly arranged a discussion on this subject by introducing the following two papers:—"Recent Investigations on Cast Iron for Pipe" by Dr. Richard Moldenke, Watchung, N. J. This paper presented an investigation of cast iron for pipe made by the author for the manufacturers of this material. It was found that with present day material

(*Concluded on page* 54)

Men of Industry

Personal News of a Business Character Pertaining to the Iron and Steel and Related Fields of Enterprise

FRED W. BAUER and James C. Mears have been appointed resident managers at Chicago for Rogers, Brown & Co., and will have charge of sales in that district. Mr. Bauer has been representing the company at Springfield, O., covering Detroit and northwestern Ohio. He started his business career with the Warder, Bushnell & Glessner Co. at Springfield, as chemist and metallurgist in its malleable and gray iron foundries, remaining there three years. When this company was merged with the International Harvester Co. he went with the Star Furnace Co., Jackson, O., as chemist at its blast furnace. During 1901 and 1902 he was salesman for the American Steel Hoop Co., Cincinnati, and in 1903 when that company was absorbed by the Carnegie Steel Co., he joined the sales force of Rogers, Brown & Co., at Cincinnati. For two years he traveled from the St. Louis office and in 1907 took over the territory he is now leaving.

FRED N. BAUER

Mr. Mears formerly was manager of the St. Louis office. He started in his business career in 1888 in the Cincinnati office of Rogers, Brown & Co., and has been in continuous service for that organization. Mr. Bauer's former territory will be divided between J. R. Morehead and John A. Plimpton, who will travel from the Cincinnati office. Mr. Morehead has been with Rogers, Brown & Co. several years starting in the Pittsburgh office, then at Cleveland and at present assistant to the sales manager at Cincinnati. Mr. Plimpton is a graduate of Massachusetts Institute of Technology, class of 1921 and in his foundry experience has done special work in heat treatment of cast iron. He became connected with Rogers, Brown & Co., in October 1923.

* * *

M. D. Church now is general manager of the Moore Steam Turbine Co., Wellsville, N .Y.

* * *

Frederick A. Pope has been made supervisor of training for the Worthington Pump & Machinery Corp., New York.

* * *

A. M. Saunders, for many years superintendent of the pipe mills at the National works of the National Tube Co., McKeesport, Pa., has been advanced to the Pittsburgh office in the Frick building.

George Duncan, assistant superintendent, succeeds Mr. Saunders at the plant. Harry C. Herpel of the engineering department, has been named assistant superintendent to succeed Mr. Duncan.

* * *

L. H. Mesker formerly part owner of the Clark-Mesker Co., Cleveland manufacturers of milling machines and later connected with the Cleveland Milling Machine Co. has been appointed sales manager for the Cleveland Planer Co., manufacturer of open side planers.

* * *

Roger H. Sproat of the American Steel & Wire Co., formerly connected with the office of the vice president and general superintendent in Pittsburgh and later with the office of the manager of wire mills and the Newburgh wire works, Cleveland, has been appointed assistant superintendent of the latter plant, effective as of July 1.

* * *

Dr. Leo H. Baekeland, president of the American Chemical society, and honorary professor of chemical engineering in Columbia university, has been made Commander of the Order of Leopold by King Albert of Belgium. Among former distinctions conferred upon Dr. Baekeland, are the crosses of an officer of the Legion of Honor of France and of an officer of the Order of the Crown of Belgium.

* * *

John C. Shillito, formerly assistant superintendent of the Beaver Falls, Pa. plants of the Union Drawn Steel Co., Beaver Falls, has been promoted to general superintendent to succeed the late Frank B. Maloney. With headquarters at Beaver Falls, Mr. Shillito will have charge of the company's three plants, two at Beaver Falls, and one at Gary, Ind. Mr. Shillito has been indentified with the Union Drawn Steel Co. for 30 years. He started as operator on a cutting machine and has served in various capacities since that time.

JAMES C. MEARS

* * *

F. M. Farmer, whose election as president of the American Society for Testing Materials, was announced at the annual meeting in Atlantic City, June 25, has been identified with the activities of that organization for many years. He served as chairman of the committee on electrical insulating materials and of the committee on rubber products. He was elected a member of the executive committee in 1921 and appointed vice president in 1923 to serve an unexpired term. Mr. Farmer was born at Ilion, N. Y., March

28, 1877. He received his early education at Ilion academy and was graduated from Cornell university, Ithaca, N. Y., in 1899. After two years with the General Electric Co. he was made inspector for the navy department where he served two years and then became connected with the Electrical Testing Laboratories, New York, with which organization he has been connected for the past 20 years, now being chief engineer. He is a fellow of the American Institute of Electrical Engineers, member of the American Society of Mechanical Engineers, the British Institution of Electrical Engineers and other national societies. He has been active in the executive and technical work of these societies and has contributed numerous papers on electrical measurements, electrical materials and similar subjects.

* * *

Bertram O. Puerner, for the past year engaged in designing and superintending the construction of a large cement plant in California for the Allis-Chalmers Mfg. Co., Milwaukee, has been assigned to Shanghai, China, as sales engineer of the cement works department. He will sail July 5.

* * *

A. H. Holliday, manager of exports, Jones & Laughlin Steel Corp., Pittsburgh, is in London on a tour of Europe during which he expects to visit England, Belgium, France, and other important iron and steel producing and consuming countries.

* * *

John Oster, for six years secretary and treasurer of the Andis O. M. Mfg. Co., Racine, Wis., and for the past year general manager as well, has resigned his connection with the company, which manufactures hair clippers and blades. His plans have not been announced.

* * *

W. M. Corse, chairman, division of research extension, National Research council, Washington, has been invited to give a lecture on American methods of research in nonferrous metals at the autumn meeting of the British Institute of Metals in London during the four days commencing Monday, Sept. 8.

* * *

Leon R. Clauson, for 12 years vice president of Deere & Co., Moline, Ill., has been elected a director and president of the J. I. Case Threshing Machine Co., Racine, Wis., succeeding Warren J. Davis, who has been elected to fill the new position of chairman of the board. Mr. Davis was elected president and treasurer in 1916, and continues as treasurer. The changes are effective Aug. 18.

Southern Business Good

Reports from 50 members of the Southern Metal Trades association indicate a reasonably good business condition in the South. On orders on hand 9 report them as good, 22 as fair and 17 as poor. Collections, inquiries and the outlook for 90 days are in about the same proportion. Stocks of pig iron were reported medium by 30, low by 18 and heavy by none. Heavy stock of scrap was reported by 9, while 28 have medium stocks and 10 low. In coke 5 have heavy stocks, 35 medium and 8 low.

Study Metal Corrosion

(Concluded from Page 52)

and practice the existing specifications were too difficult to meet generally. Operating tests to improve the metal, by varying the mixtures failed to give desired results. Dr. Moldenke recommended that the whole subject of cast iron pipe be made a matter of further research, the engineers to study methods of testing it, and manufacturers of pipe to standardize their plants and practice so that the test results may be obtained with materials that are commercially available.

The second paper presented was by J. T. Mackenzie, chief chemist, American Cast Iron Pipe Co., Birmingham, Ala, presented data on 113 sets of standard test bars of 2 by 1 by 26-inches, of widely different analyses and origin, showing that within the limits of error of melting and testing the deflection at a given point increases as the carbon plus one-fourth the silicon content. The author advocated that a minimum value of 1900 pounds for measurement of deflection be incorporated in the present specifications for cast iron water pipe.

A paper was presented by C. G. Lutts, United States navy yard, Boston, covering the effect of proofing of chain on length and resistance to shock and demonstrating that chain is made brittle by proofing.

Report of committee A-2 on wrought iron was read by H. E. Smith, chairman. This recommended the advancement to standard of revised specifications for boiler tubes and chain, and specifications for merchant bar iron. Minor revisions were also recommended in this report in the standard specifications for wrought-iron pipe, forgings, and staybolts, engine bolts and extra-refined bars, namely phosphorus not over 0.04 per cent.

Report of committee A-7 on malleable castings, Enrique Touceda, secretary, was read by W. P. Putman, Detroit Testing Laboratory, Detroit. This was a general progress report in which the committee recommended the advancement to standard of tentative revisions in the specifications for malleable castings and discussed briefly the question of machineability and its relations to the physical properties of malleable castings at present specified.

Dr. Richard Moldenke, Watchung, N. J., presented the report of committee A-3, of which he is chairman, in which the committee recommended the advancement to standard the tentative specifications for chilled cast-iron car wheels, for foundry pig iron, and for high-test gray-iron castings. It was recommended that these recommendations which previously had not been referred to the committee should first be voted upon by committee A-3 and if favorably received should be submitted to letter ballot of the society.

Bethlehem's Accidents Are Reduced 40 Per Cent

Eugene G. Grace, president of the Bethlehem Steel Corp. announces in a bulletin circulated among employes that the corporation's safety campaign has reduced the number of accidents per 1000 employes by approximately 40 per cent in the last eight years. The number of fatal accidents has been reduced in the same period by 25 per cent. Mr. Grace estimates that this reduction in accidents saved the company and its employes approximately $3,000,000. Under the caption "One of the most important planks in the platform of good business," Mr. Grace writes:

Accident prevention work pays threefold returns: There is a return to the employer in lower costs, return to the employe in a physical and monetary saving, and a return to the community through a lessening of care for the maimed and disabled. Any one of these alone justifies the furtherance of the work, but taken in the aggregate they constitute one of the most important planks in the platform of good business."

Acquires Furnace Rights

The Combustion Engineering Corp., Combustion Engineering building, 43 Broad street, New York, has taken over the rights for the Hermansen-type recuperating furnace. The furnace is said to be applicable to all melting and reheating processes, using oil, coal or any of the several types of gases, and is designed to affect a saving in the use of fuel. The company has organized an industrial furnace department to handle this class of business. Col. H. D. Savage, vice president, an authority on pulverized fuel, has assumed direct management of the department. In Europe there are approximately 10,000 of these furnaces in operation, but as yet, only a few in the United States.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

AS A result of extensive plans for hydro-electric development throughout Canada, the Canadian General Electric Co. and its subsidiary, the Canadian Allis-Chalmers So., Toronto, Ont., are busy on the manufacture of heavy equipment, including turbines, generators, etc. Included in business on the books of the company are orders for a generator for the Ontario Hydro Electric commission for installation at Chippawa, Ont., and two turbines and generators for the Quebec Development Co. Other contracts on hand include equipment for the British Columbia Electric Railway Co.; the West Kootenay Power Co.; and the South Bay Power Co. Representing the General Electric Co. of the United States, which has obtained control of the Canadian General Electric Co. D. C. Durland, has been made a director of the Canadian company, and has associated himself with the management of the Toronto works.

* * *

THE Penn Electrical & Mfg. Co., Irwin, Pa., manufacturer of switchboards and panel boards, has completed an addition to its main building, practically doubling its capacity The company operates branches in Philadelphia, Baltimore, New York and Buffalo.

* * *

INCREASE in capitalization of the United Stokers Co., LaPorte, Ind., from $25,000 to $100,000 has been for the purpose of handling increased demand for its products. The plant has been moved from Hammond to LaPorte. E. L. Brown is vice president and general manager.

* * *

AN UNUSUALLY complete concentrating plant for the Chateaugay Ore & Iron Co., Lyon Mountain, N. Y., is being constructed to produce a 65 per cent concentrate. It will include six ventilating type pulleys 30 inches in diameter and with 36-inch face and 30 drum type magnetic separators 30 x 30 inches, designed and built by the Magnetic Mfg. Co., Milwaukee, Wis.

* * *

SHOPS for the Central of Georgia railway, at Savannah, Ga., now are being erected by the Steel Products Co., Lathrop avenue, that city. The company specializes on rush work, fabricating steel for mill buildings, tanks, towers, hoppers, etc. It has a capacity of about 175 tons a month. J. P. Wheeler is president, G. A. Mercer, Jr., vice president and R. N. Matthews, superintendent of the shop

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ARTHUR G. McKEE & CO., Cleveland, have been chosen engineers and contractors by the A. M. Byers Co. for the design and construction of a pig casting machine at its blast furnace plant at Girard, O. The equipment will include a single strand Heyl & Patterson type pig casting machine, a 150-ton ladle crane by the Morgan Engineering Co. and two 90-ton Pollock short pour hot metal ladles.

* * *

TWICE the former floor space is provided in the building recently completed for the Atlanta Sheet Metal Works, at 799 Marietta street, Atlanta, Ga. The company will move into the new plant shortly. Increased business amounting to 33 per cent gain over the corresponding period of last year has necessitated larger quarters. The company manufactures skylights, ventilators, cornices, metal doors, metal windows, etc.

* * *

A FEW odd tools remain to be purchased by the Meachem Gear Corp., 411 Canal street, Syracuse, N. Y., to round out its equipment. The company recently altered its capitalization from 1000 shares $100 par preferred stock and 3000 shares no par value common, to 5000 shares no par value stock. Increased funds were used to acquire the plant and property of the Weekes-Hoffman Corp., at 122 Dickerson street, Syracuse. Approximately $30,000 worth of spiral bevel gear cutting machines have been ordered by the Meachem corporation from the Gleason Works.

* * *

A GRAY iron foundry will be constructed by the American Furnace & Foundry Co., Milan, Mich., manufacturer of hot water and steam boilers for house heating purposes, recently incorporated with a capital of $50,000. Construction of the plant has been started. It is to be 80 x 250 feet, of steel and concrete. All necessary equipment has been purchased with the exception of a few small tools. A production of 6000 boilers per year is expected. E. L. Watson is president of the company, G. L. Laskey, vice president and F. E. Ross, treasurer.

* * *

GREAT LAKES DISTRIBUTING CO., Penobscot building, Detroit, has purchased foundry bank sand properties located near Saginaw, Mich., covering 160 acres adjacent to the Pere Marquette railway. Engineers estimate that there are in excess of 100,000 carloads of high quality bank sand for coremaking. Additional equipment is being purchased which will increase the present daily loading capacity of 42 cars. For several years this company has jointly operated and had exclusive sale of the above banks sand but now is entering the producing field on a larger scale. It has in contemplation the purchase of extensive molding sand properties in Ohio.

* * *

ARROWHEAD IRON WORKS, INC., Kansas City, Mo., recently incorporated, will manufacture steel gratings, steel treads and fire escape steps. The company was incorporated for $100,000 and already has increased its manufacturing facilities to accommodate the increased demand for its products. William L. Pattison is president of the Arrowhead works, Walter B. Richards, first vice president; John A. Gonover, second vice president; Joseph E. Woodmansee, treasurer, and Stewart H. Richards, secretary. The home office is located at 200 West Fifth street, Kansas City, Mo., and branches will be maintained in New York, Chicago and San Francisco. Eventually fabrication plants are contemplated for those cities.

Start Gautier Extension

Plans are almost completed for additions and extensions of the Gautier plant of the Cambria Steel Co., Johnstown, Pa., on which at least $20,000,000 will be spent, according to announcement by Charles M. Schwab of the Bethlehem Steel Co. The company has notified the city of Johnstown to vacate certain property owned by the company which has been used as public parking space, and construction of mills on the plot will be started at once. The character of the new mills and extensions has not been announced.

Steel Scrap Rates From Texas Increased

Chicago, July 1.—Increased rates on iron and steel scrap from common points in Texas to Kansas City, Moline, St. Louis, Peoria, Chicago and Cincinnati, the principal consuming points, go into effect June 25. The old and new rates are as follows:

	Net tons Old rates	New rates
Kansas City	$6.50	$7.60
Moline	7.60	8.90
St. Louis	6.50	7.60
Peoria	8.10	9.40
Chicago	8.10	9.40
Cincinnati	8.10	9.40

Dealers and consumers believe the effect of the new rates will be to prevent shipment of iron and steel scrap from Texas with a loss of a large tonnage of relative by low grade material which the railroads otherwise would be able to move.

The situation at present is that the Southwest, including Texas, contains a large tonnage of iron and steel scrap which it has not been profitable to ship to consuming points because of the low price and the high freight rate. The new rate, the dealers believe makes the wall higher and will delay movement of agricultural and oil country scrap until selling prices move to a much higher point than otherwise would be the case.

Tidewater Steel Takes Over Two Mills

The Tidewater Steel Corp., which was organized in March under the laws of Delaware with a capital stock of $1,500,000, is a holding company for the Maryland Steel Rolling Co. and the Trenton Strip Steel Co. Plans for the acquisition of two additional companies are under consideration. The Maryland Steel Rolling Co. has headquarters in the Fidelity building, Baltimore, and has under construction at Hagerstown, Md., a plant which is expected to be operating in August. The Hagerstown plant is being equipped with two bar mills, 16-inch and 10-inch respectively, and will roll bars from scrap, having capacity of 50,000 tons. Reuben S. Baldwin is general manager of the Maryland Steel Rolling Co. The Trenton Strip Steel Co., Trenton, N. J., is equipped with 10 mills, 8-inch and 10-inch, for producing cold-rolled strip steel, having a capacity for 10,000 tons annually. Wm. F. Preston is general manager of the Trenton Strip Steel Co.

The Tidewater Steel Corp. has its headquarters in the Fidelity building, Baltimore. Its officers are as follows: President, M. David Perine; vice president, D. D. Mallory; secretary and treasurer, Arthur Aston; general manager, Perry D. Mackey, foundry superintendent for the Bethlehem Steel Co.

Iron and Steel Wages Next to Highest Paid

Average earnings of workers in the iron and steel industry in April were $33.57 a week, according to a report by the National Industrial Conference board. This compares with $34.83 in March. Ten years ago the average earnings were $14.96.

The average for the iron and steel industry is second to the highest for workers in 23 representative industries, the board states. The news and magazine printers' average weekly earnings were $36.14, compared with $17.44 in 1914. Next in size of pay envelope in April were the automobile factory workmen who obtained $31.12 a week, which was $16.03 more than in 1914. Fourth in line were the book and job printers, with weekly earnings of $31.01. Foundry and machine shop workers were fifth with $28.88 for April, as compared with $13.61 10 years ago.

Indictments Attacked

A declaration was filed in federal court at Cleveland, June 24, by 48 officials of malleable castings companies, members of the National Malleable Castings association, contending indictments returned against them recently were not sufficient in law. Judge Westenhaver set July 7 as the date for arguing the petition.

Engineers Go to World Power Conference

New York, July 1.—More than 200 leading American mechanical, electrical, civil, marine, mining and chemical engineers sailed recently on the SCYTHIA to attend the world power conference in London during the first two weeks in July. The conference, the first international meeting of its kind, will be attended by delegates from 31 countries. The meeting is considered of great importance, because, according to O. C. Merrill, general chairman of the American committee, it will aid in answering many questions which can be settled only by international accord, such as the interchange of power and the conservation of the world's fuel supplies. It will also focus attention on the economic and social importance of the rapid development and utilization of power resources. The American delegates will present 37 papers. Eight technical, 12 business and nine government organizations interested in power development, will be represented.

General Machine & Iron Works, Detroit, has increased its capitalization from $30,000 to $100,000.

Obituaries

WILLIAM W. SMITH, Flushing, L. I., president of John Hassall, Inc., Brooklyn, manufacturer of small rivets and machine-driven wire nails, died June 24 at Brattleboro, Vt., following an operation for appendicitis. He was stricken on the way home from Hanover, N. H., where he attended the graduation exercises of his son, William W. Smith Jr. at Dartmouth College. Mr. Smith was born in Philadelphia 58 years ago, went to New York city as a youth and entered the Hassall firm which was established in 1870 by his grandfather.

* * *

Arthur Mackey, formerly connected with the barbed wire and nail industry, recently died at his summer home on Puget Sound. He was born at Waterloo, N. Y., in 1855 and lived near Seattle since his retirement from active business a year ago. With associates Mr. Mackey founded the nail and barbed wire company, Lawrence, Kan.

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William T. Ruete, inventor and authority on interior conduit, died June 7 in New York. At the time of his death he was consulting engineer of the conduit and wire division of the General Electric Co.

* * *

Burton P. Hall, treasurer of the G. F. Hall Co., 206 Center Street, New York, mechanical engineer, died recently at his home at Fanwood, N. J., aged 57 years. He was born in New York and studied mechanical engineering at Stevens Institute of Technology. He was a member of several organizations, including the American Society of Mechanical Engineers.

Sentiment Better in Tool Market

Character of Inquiries Improves—Sales Still Confined to Small Lots—Crane Market Shows Spurt of Activity When Two Steel Companies Award 17 Traveling Cranes for New Mills

MORE promising inquiries than have been received in several months are giving a better tone to the machine tool market. Sales continue at a low rate, but the volume and character of feelers for price quotations are indicative of imminent business. This is particularly true in the case of planers, one manufacturer of this product stating that more inquiries were received in the last three weeks than in the preceding two months. Purchases and inquiries on the part of educational institutions continue to play a conspicuous part in the market's activity. Railroad buying still is deferred, except in the case of a few miscellaneous items of equipment.

It is reported that the sales of machine tools in May, 1924, were approximately 20 per cent less than in the same month last year.

After a long period of quietness in the crane market, several fairly large contracts have been placed. The National Tube Co. purchased 10 electric traveling cranes for its new Gary tube works, and the Bethlehem Steel Co. contracted for seven cranes for its Sparrow's Point, Md., plant. The Carnegie Steel Co. is expected to start buying on its list of equipment for Homestead at an early date.

Spurt in Crane Buying Stirs Equipment Market

NEW YORK, July 1.—Trading in the eastern machine tool market continues quiet, with buying of light equipment for public schools among the later developments. Possibly the largest school list placed recently involves approximately 30 machine tools for the Henry Snyder junior high school, Jersey City. Orders include 24 lathes, one 20-inch planer, two millers, two shapers, and one 14-inch and one 24-inch wet grinder. In addition, equipment was purchased for two woodworking shops, for this school, including five lathes for one and three for the other.

Dreyfus Bros., 29 Broadway, closed on a 14-inch engine lathe for a school in South America. Bids will be closed by the city board, 34½ East Twelfth street, July 7, on some miscellaneous tools and supplies for the Bronx continuation school and the Staten Island continuation school.

Miscellaneous industrial buying includes a 100-ton bushing press for the Magnus Co., New Haven, Conn.; one 6-foot radial drill with one seller and two with another for the General Electric Co., Schenectady, N. Y.; one 44-inch side head boring machine for the S-K-F-Ball Bearing Co., Hartford, Conn.; and 102-inch tire boring and turning mill for the Altoona shops of the Pennsylvania railroad. The Pennsylvania, in addition to the three machines noted in last week's issue, has come into the market for a compressor and an electric hammer.

A few additional machines for the Shibaura Engineering Works, Japan, has been placed on inquiries by the General Electric Co., Schenectady, N. Y., and Mitsui & Co., Ltd., 65 Broadway. Action on some of the heavier tools is expected shortly. The Seaboard Air Line is inquiring for six machines, including a grinder and a 32-inch shaper. The Brooklyn-Manhattan Transit Co., 85 Clinton street, Brooklyn, is inquiring for a 5-foot radial drill

Outstanding in an otherwise dull crane market is the award of seven electric overhead cranes, ranging from five to 25 tons capacity, for the Sparrows Point, Md., plant of the Bethlehem Steel Corp. This business was divided between three builders. Locomotive crane demand continues exceedingly dull.

Inquiries More Promising

CLEVELAND, July 1.—While the volume of sales in the local machine tool market shows practically no change from the low mark it has maintained during the past month, the number and character of inquiries are encouraging. Several dealers have received lists which give every promise of being closed not later than September. One manufacturer in this district has received more inquiries during the past three weeks than during the previous three months.

The American Furnace & Foundry Co., Milan, Mich., is in the market for a few small machine tools to complete equipping of a new gray iron foundry.

Crane Awards Hold Attention

PITTSBURGH, July 1.—Crane orders and inquiries this week take the center of the equipment market stage. The National Tube Co. for Gary tube works, Gary, Ind., bought 10 cranes as shown in the accompanying table from the Shaw Electric Crane Works, Muskegon, Mich. The Bethlehem Steel Corp. bought seven for Sparrow's Point, Md., one going to Alliance Machine Co., some to Morgan Engineering Co., and other builders. The Carnegie Steel Co. is scheduled to start buying on its large list of crane equipment for Homestead, Pa. and other points, and now is taking bids on a large ore bridge. Several single crane inquiries still are out including the Parkersburg Machine Co., Parkersburg, W. Va., and Superior Steel Products Co., Monaca, Pa. A number of crane inquiries are issued verbally for estimating purposes; one calls for two 50-ton, one for one each 40 and 10-ton, and one for a 10-ton, but all these propositions are merely contemplated.

In the machine tool market an early order is expected from the City Garage, Pittsburgh, which closed bids last Thursday on about 15 items, including a 16-inch lathe, a 20-inch shaper, a 3-foot radial drill, a floor crane, an electric drill and an electric grinder, as well as accessories and supplies. Within the past few days one dealer here has sold three lathes, two combination punches and shears, and a hydraulic press to five or six buyers. Another sold one each 1000 and 2500-pound forging hammers, a die sinker and a 60-inch vertical boring mill to four buyers. A third sold two shears and a number of smaller items. One used machinery house sold a number of small items, no one of which amounted to over $300. Sellers of this type of equipment report a revival of interest in quotations made by them some time ago and new bids are being asked. Inspections of used machines are being made, so that they are hopeful of a real buying movement starting soon. The general feeling, however, is that no real revival can be expected before

September or October and that two or three months of real quietness will ensue in the interval.

Better Feeling Exists

CINCINNATI, June 30. — While the volume of sales has not increased appreciably in the past week, a slightly better feeling exists in the machine tool market because of the character of the inquiries being received. Lists now coming out from prospective buyers, are thought to represent actual needs, while in many instances during May and June inquiries were circulated on which action was deferred indefinitely.

Railroad buying has not been up to expectations, but it is now reported that several western roads soon will take action on lists which were issued sometime back. It is known that an eastern railroad is preparing specifications for its machine tool needs. Railroad purchases of planers while not heavy have been fairly well maintained, according to a manufacturer in this district. During the past week the Cincinnati Planer Co. and the G. A. Gray Co., each sold a planer in the Milwaukee, Wis., district.

Slight Sales Improvement

BOSTON, July 1.—While as yet no sizeable lists are before the trade and sales continue to be almost entirely for individual tools, the aggregate of the past week shows a slight improvement, according to leading dealers. Previous to this June sales had fallen behind the low record of May, but now it appears that the June total will exceed that of May. A persistent demand for production equipment comes from Connecticut manufacturers of hardware and building specialties. One such manufacturer took a heavy special grinder during the week. A paper machinery manufacturer bought several tools. General machine shops in eastern Massachusetts accounted for sales of three lathes, a planer, a screw machine, and several grinders. One dealer reports selling five new tools during the week following two weeks without a single new tool sale. Prices of new tools are firm. Used equipment, however, fluctuates as the number of auction sales increases or decreases. A large number of standard tools were offered at auction June 30 at the plant of the American & British Mfg. Co., Bridgeport, Conn.

Gray & Davis, Inc., Boston, have secured contract for starting and lighting equipment for all Jordan cars and additional equipment will be required.

Machine Exports Are Holding Up Well

MACHINERY exports in May and during the eleven months ending May 31 are holding their own exceelently compared with the similar periods a year ago. In some items, notably planers, shapers, slotters, gear cutters, power hammers and grinding machines considerable increase is shown. Lathes and screw machines show a decline. Details of exports are as follows:

	Gross Tons			
	May		Eleven months ended May	
	1924	1923	1924	1923
Lathes	47	67	774	855
Boring and drilling machines	196	136	1,903	1,784
Planers, shapers and slotters	27	8	195	167
Benching and power presses	21	24	277	225
Gear cutters	47	9	485	196
Milling machines	21	22	314	338
Thread cutting and screw machines	32	84	575	1,330
Punching and shearing machines	13	30	242	293
Power hammers	31	18	320	236
Rolling machines	.....	3	49	46
Sharpening and grinding machines	.....	3,769	4,050**	20,719
External grinding machines	212	.....	1,476*	.....
Internal grinding machines	32	.....	304*	.....
Other grinding and sharpening machines	48	.....	*2041	.....
Chucks for machine tools	1,220	2,434	28,138	19,246
Reamers, cutters, drills and other metal working tools	68	110	941	853
Pneumatic portable tools	1,399	1,095	11,885	9,436
Air compressors	456	407	5,778	4,228
Cranes—				
With swinging booms	10	.....	**18	.....
Other cranes	19	.....	**103	.....
Hoists and derricks, except mining	477	744	4,369	3,505

*Jan. 1 to May 31.
**July 1 to Dec. 31.

Dearth Continues at Chicago

CHICAGO, July 1.—Machine tool dealers continue to face a dearth of live inquiry. The falling off in the past two weeks has been marked, and June may prove to have been the lowest month of the year to date. Closing of the Chicago board of education's long list for its technical high schools will release the largest list outside of the Santa Fe railroad's, which continues in abeyance. The Burlington railroad has placed a power brake and a multiple punch for its Aurora, Ill., shops. The Chicago board of education is inquiring for a pendulum foot press and a squaring shear for its Crane high school, in addition to the previous list. Used machinery still is making big inroads into the business of new machinery dealers.

Crane Awards and Inquiries of the Week

Orders Placed

10 cranes for the National Tube Co., Gary works, Indiana, as follows: Two 15-ton with 80-foot span, four hooks; two 15-ton with 60-foot span, four hooks; two 15-ton with 5-ton auxiliaries, 60-foot 6-inch span, single hook on each hoist; two 10-ton with 60-foot 6-inch span, two hooks; one 15-ton with 5-ton auxiliary, 50-foot 6-inch span, and one 20-ton with 5-ton auxiliary, 52-foot 6-inch span, to Shaw Electric Crane Works, Muskegon, Mich.

Seven electric overhead cranes for the Sparrows Point, Md., plant of the Bethlehem Steel Corp., awarded as follows: 25-ton crane, 68-foot span, to the Morgan Engineering Co.; one 15-ton crane to the Alliance Machine Co.; two 15-ton cranes to the Cleveland Crane & Engineering Co.; and three 5-ton cranes, one of 18-foot span and two of 82-foot span, to the Chesapeake Iron Works; these cranes are for installation in a tinplate mill.

Four 5-ton handpower hoists and monorail track for the Improvement Office Partition Co., Elmhurst, Long Island, to the New Jersey Foundry & Machine Co.

Two 5-ton bucket handling cranes, each with 49-foot span, for the American Cyanide Co., 511 Fifth avenue, New York City, to the Pawling & Harnischfeger Co.

One 5-ton hand power crane for the Youngstown Sheet & Tube Co., Youngstown, O., to the Northern Engineering Works, Detroit.

One 5-ton electric traveling crane for the West Leechburg Steel Co., West Leechburg, Pa., to the Northern Engineering Works, Detroit.

One 15-ton crane bought by R. D. Nuttall Co., Pittsburgh (slightly used) through a local dealer.

Single Installations

30-ton locomotive crane for the North Carolina Granite Co., Mt. Airy, N. C., to Industrial Works.

25-ton electric crane, 68-foot span, for the General Sugar Co., New York City, for shipment to Cuba, to an eastern builder.

20-ton full revolving locomotive crane, 8-wheel type, for an iron and steel company, to the Ohio Locomotive Crane Co.

7-ton electric crane, 50-foot span, for the New York Brick Handling Co., New York City, to Pawling & Harnischfeger.

6-ton, 4-motor crane, 54-foot, 8-inch span, equipped with 2-cubic yard bucket, for the Pennsylvania Glass Sand Co., Mapleton, Pa., to the Shepard Electric Crane & Hoist Co.

5-ton cage controlled electric crane, 48-foot span, for the Burnham Boiler Co., Lancaster, Pa., to the Shepard Electric Crane & Hoist Co.

3-ton electric crane, 62-foot span, for the Macabi Sugar Co., Cuba, to an eastern builder.

3-ton electric crane, 22-foot span, for the Alloy Metal Wire Co., Grand Central terminal building, New York City, to Alfred Box & Co.

1½-yard grab bucket crane for the Mississippi Glass Co., formal award placed by Dwight P. Robinson & Co., Inc., 61 Broadway, New York City, with Pawling & Harnischfeger Co.

Orders Pending

Five 5-ton cranes, one 3-ton crane and five 3-ton 2-motor hoists for the Westinghouse Airbrake Co., Wilmerding, Pa.; matter still in abeyance.

Two large gantry cranes for the Pennsylvania railroad, Conway, Pa.; understood papers back in Pittsburgh from Philadelphia for revision.

One 5-ton crane for the Parkersburg Machine Co., Parkersburg, W. Va.; bids being tabulated.

One 5-ton crane for the Superior Steel Products Co., Monaca, Pa.; bids being tabulated.

One floor crane for the City Garage, Pittsburgh; bids all in.

75-ton, 4-motor crane, 10-ton auxiliary, 55-foot span, for the Florida East Coast, 120 Broadway, New York City, for installation at Miami, Fla.

Extensive crane equipment for the Carnegie Steel Co., Homestead, Pa.; understood that distribution of orders will start this week.

Recent Industrial Business Changes

GIBB INSTRUMENT CO., Bay City, Mich., manufacturer of electric arc, spot and automatic welding machines, has placed W. F. Hebard & Co., 551 West Van Buren street, Chicago, in charge of its office in that city. Thomas Barnes, an officer of the Hebard company, will head the welding department there. He will be assisted by Charles Watson, who has served the Gibb company in Japan and the United States, and has been connected with the Chicago office for the last two years. Mr. Hurd, former representative at Chicago now will represent the Gibb company in New England. He will take up his new duties Aug. 1.

* * *

The American Automatic Sprinkler Co., Chicago, has been dissolved.

* * *

Perin & Marshall have established their headquarters at 40 West Fortieth street, New York.

* * *

The W. H. Drummond Corp., 60 Lafayette street, Newark, N. J., recently incorporated, will deal in stoves, ranges, furnaces, steam and hot water heaters and repair parts.

* * *

Dearborn Chemical Co., announces the removal of its general offices in the city of Chicago to the nineteenth floor of the Straus building, 310 South Michigan avenue, that city.

* * *

The Olson Cylinder Grinding Co. Madison, Wis., has changed its name to T. C. Olson Co., and will manufacture grinding machines in addition to doing general engine repair work.

* * *

The American Crane Co., Friendship, N. Y., builder of cranes, hoists, etc., has purchased the electric crane and hoist business from the Barber Foster Engineering Co., 5005 Euclid avenue, Cleveland, manufacturer of electric traveling cranes and hoists. The company was formed some years ago to operate a manufacturing plant for the Barber Foster Engineering Co.

* * *

The Bassick-Alemite Corp., a holding company controlling several manufacturing corporations, on May 1 took over the Allyne-Zerk Co., Cleveland. The latter company will continue as an independent unit under the old executives and with same policies.

* * *

Fred F. Jordan and John Meser, partners doing business as the Hartford Tool & Machine Co., Hartford, Wis., have dissolved. The entire interest is taken over by Mr. Jordan, who will continue under the old name. The shop is being remodeled and enlarged.

* * *

Alfred W. Mellowed and Frank W. Regner, who have been doing business as the Milwaukee Lock Washer Co., 409 Chambers street, Milwaukee, for the past year, have incorporated the business with $25,000 capital and intend to double their output within the next 60 days.

* * *

Gradual consolidation of the manufacturing activities of the Consolidated Machine Tool Corp., is under way. The small tool work now carried on by the Colburn Machine Tool Co., Cleveland, will be moved to the Betts plant at Rochester, N. Y. Operations will be carried on in the Cleveland plant along other lines.

* * *

Charles T. Topping Machinery Co., manufacturer of light weight traction trench excavators, etc., has removed its offices from the House building, Pittsburgh, to Box 842, Dayton, O. The new offices will be located at the plant of the Smith Gas Engineering Co., Moraine City, suburb of Dayton.

* * *

The Persons-Arter Machine Co., 72 Commercial street, Worcester, Mass., after July 1 will be known as the Arter Grinding Machine Co. The personnel of the executives remain intact, the change in name resulting from Charles A. Persons severing his connection with the company three years ago, and the closer description of the new name to the activities of the company.

* * *

Industrial Works, Bay City, Mich., manufacturer of cranes, etc., has appointed Ridenour, Seaver & Kendig, 773 Ellicott Square, Buffalo, N. Y., as its representative in that district. L. N. Ridenour is resident manager. Ridenour, Seaver & Kendig, Pittsburgh and Cleveland recently opened offices in Buffalo, as announced in the June 5 issue of IRON TRADE REVIEW.

* * *

The Steel Sales Corp., 823 Book building, Detroit, has been appointed direct and exclusive representative in the Michigan territory for the Standard Gauge Steel Co., Beaver Falls, Pa. Steel Sales Corp. will carry a complete stock of cold-drawn shafting, cold-drawn screw stock, flats, squares, hexagons and specialties and will execute contracts for mill shipments.

* * *

Concentration of production by the Aluminum Goods Mfg. Co., Manitowoc, Wis., is being effected. The St. Louis branch works, established in 1918 when a large local industry was acquired, will be abandoned and the machinery moved to Manitowoc. Buildings have been disposed of. The company has large works at Two Rivers, near Manitowoc, and a large eastern plant at Newark, N. J. These are all of modern construction and have been enlarged in the past year, so that no additions probably will be necessary for at least a year or two.

* * *

The Emerman Co., Erie, Pa., manufacturer of iron and steel railway equipment, has appointed L. W. Landay as manager of its Pittsburgh offices at Frick building, that city. He formerly was with the Hyman-Michaels Co. and the Wilkoff Co. The Emerman Co. has established branch offices in the Book building, Detroit, and has appointed M. M. Broad, formerly with the Hyman-Michaels Co., as district manager. Samuel F. Staff, formerly at the Pittsburgh office of Emerman Co. has been appointed assistant to Mr. Broad at Detroit.

* * *

The Dominion Engineering Works, Ltd., Montreal, Que., has been incorporated with $2,500,000 capital stock, to acquire and take over the plant and business of the company of the same name now operating. The Dominion Engineering Works, Ltd., is controlled by the Dominion Bridge Co., Ltd., and its annual report for the year ending Dec. 31, 1923, showed an operating loss of $35,401.

Warehouse Steel Prices

Quotations at Cents Per Pound at Leading Market Centers

STEEL BARS

Boston	3.365c
Buffalo	3.40c
Chicago	3.10c
Cincinnati	3.40c
Cleveland	3.21c
Detroit	3.25c
Los Angeles	3.75c
New York	3.34c
Philadelphia	3.10c to 3.25c
Pittsburgh	3.00c
San Francisco	3.75c
Seattle	3.50c
St. Louis	3.25c
St. Paul	3.35c

IRON BARS

Boston	3.365c
Buffalo	3.35c
Chicago	3.10c
Cincinnati	3.40c
Detroit	3.25c
New York	3.34c
Philadelphia	3.10c to 3.25c
St. Louis	3.25c

REINFORCING BARS

Boston	2.75c
Buffalo	3.40c
Chicago	2.35c to 2.45c
Cincinnati	3.40c
Cleveland	2.66c to 3.36c
Detroit	3.25c
Los Angeles, C. L.	3.60c
Los Angeles, L. C. L.	4.00c
New York	3.00c
Philadelphia	2.90c to 3.00c
Pittsburgh	2.30c
San Francisco, C. L.	3.65c
San Francisco, L. C. L.	4.00c
Seattle	3.50c

STANDARD STRUCTURAL SHAPES

Boston	3.465c
Buffalo	3.50c
Chicago	3.20c
Cincinnati	3.50c
Cleveland	3.31c
Detroit	3.35c
Los Angeles	3.85c
New York	3.44c
Philadelphia	3.10c to 3.25c
Pittsburgh	3.10c
San Francisco	3.60c
Seattle	3.60c
St. Louis	3.35c
St. Paul	3.45c

PLATES

Boston	3.465c
Buffalo	3.50c
Chicago	3.20c
Cincinnati	3.50c
Cleveland, ¼-inch and thicker	3.31c
Cleveland, 3/16-inch	3.55c
Detroit	3.35c
Detroit, 3/16-inch	3.45c
Los Angeles	4.00c
New York	3.44c
Philadelphia	3.10c to 3.25c
Philadelphia, 3/16-inch	3.32c to 3.47c
Pittsburgh	3.10c
San Francisco	3.75c
Seattle	3.50c
St. Louis	3.35c
St. Paul	3.45c

NO. 10 BLUE ANNEALED SHEETS

Boston, 3/16-inch	4.34c to 4.515c
Buffalo	4.05c
Chicago	3.90c
Cincinnati	4.00c
Cleveland	3.65c to 3.76c
Detroit	4.05c
Los Angeles	5.00c
New York	4.14c
Philadelphia	3.90c
San Francisco	4.50c
Seattle	4.75c
St. Louis	4.00c
St. Paul	4.15c

NO. 28 BLACK SHEETS

Boston	4.85c to 5.00c
Buffalo	4.75c
Chicago	4.70c
Cincinnati	4.65c
Cleveland	4.55c
Detroit	4.75c
Los Angeles	6.20c
New York	4.75c
Philadelphia	5.00c
San Francisco	5.50c
Seattle	5.75c
St. Louis	5.00c
St. Paul	4.95c

NO. 28 GALVANIZED SHEETS

Boston	5.85c to 6.00c
Buffalo	5.85c
Chicago	5.60c
Cincinnati	5.85c
Cleveland	5.65c
Detroit	5.85c
Los Angeles	7.00c
New York	5.75c
Philadelphia	6.00c
San Francisco	6.35c
Seattle	6.75c
St. Louis	6.00c
St. Paul	5.75c to 6.00c

BANDS

Boston	4.115c
Buffalo	4.15c
Chicago	3.75c
Cincinnati	4.05c
Cleveland	3.96c
Detroit	3.90c
Los Angeles	4.65c
New York	4.09c
Philadelphia	3.85c to 4.15c
Pittsburgh	3.70c
San Francisco	4.25c
Seattle	4.50c
St. Paul	4.00c

HOOPS

Boston	5.60c
Buffalo	4.50c
Chicago	4.25c
Cleveland, 1-inch and wider No. 20 and heavier	3.96c
Cleveland, narrower than 1-inch	4.46c
Detroit	4.40c
New York	4.59c
Philadelphia, ¾-inch and wider, 20 gage and heavier	4.10c to 4.27c
Philadelphia—narrower than ¾-inch	4.60c to 4.77c
Pittsburgh	3.70c
Seattle	5.50c
St. Paul	4.80c

COLD FINISHED STEEL

Boston (rounds)	4.25c
Boston (shapes)	4.75c
Buffalo (rounds)	4.30c
Buffalo (shapes)	4.80c
Chicago (shapes)	**4.40c**
Chicago (rounds)	3.90c
Cincinnati (rounds)	4.15c
Cincinnati (shapes)	4.65c
Cleveland (rounds)	4.10c
Cleveland (shapes)	4.60c
Detroit (rounds)	4.20c
Detroit (shapes)	4.70c
Los Angeles (rounds)	5.75c
New York (rounds)	4.25c
New York (shapes)	4.75c
Philadelphia (rounds)	4.15c to 4.35c
Philadelphia (shapes)	4.65c to 4.85c
Pittsburgh (rounds)	3.90c
Pittsburgh (sq. hex. and flats)	4.40c
San Francisco (rounds)	5.50c
Seattle (rounds)	5.00c
St. Paul (rounds)	4.15c

WELDED PIPE

Discounts from warehouse, New York City

Standard Steel Pipe
(Subject to Shading)

	Black	Galvanized
⅛-⅜-inch butt	—31	+ 2
½-inch butt	—41	—24
¾-inch butt	—46	—32
1/3-inch butt	—48	—34
3½-inch lap	—44	—30
7-8-inch lap	—41	—11
9-10-inch lap	—35	— 8
11-12-inch lap	—34	— 6

Wrought Iron Pipe

	Black	Galvanized
⅛-⅜-inch butt	+44	+78
½-inch butt	— 4	+19
¾-inch butt	—11	+ 9
1-1½-inch butt	—14	+ 6
2-inch lap	— 5	+14
3-6-inch lap	—11	+ 6
7-12-inch lap	— 3	+16

New Construction and Enterprise

CHICAGO—Chicago Sand Blasting Co., Inc., 3324 North Clark street, has been incorporated for $5000 to do sandblasting, etc., by Arthur Slutzky, Abe Krause and Ernst Dennen.

CHICAGO—The Finial Co. of America, 1433 South Wabash avenue, has been incorporated for $1000 to manufacture and deal in brass for lamps, furniture specialties, etc., by Louis Lidsky, Elaine Harkes and Preston Clark.

CHICAGO—Western Equipment Co., 209 South LaSalle street, has been incorporated with 225 shares no par value stock to deal in machinery and equipment, etc., by Charles V. Hicks, Charles B. Fullerton, and Joseph P. Oleary.

CHICAGO—American Toy Vehicle Corp., 4317 North Western avenue, has been incorporated with 250 shares no par value stock to manufacture and distribute toys and vehicles, by Chester A. Phillips, F. E. Houck and W. E. Clark.

ELGIN, ILL.—Geneva Tool & Machine Co.

Where additional information is presented, reference is made to date of issue in which previous item appeared.

has been taken over by Benjamin Lance, who plans enlargements of the machine and repair departments and the establishment of a modern repair shop to handle tool and die making, die stamping, special machinery, machine and automobile parts repairing. A lathe, several punch presses, drilling machines, and grinders have been purchased.

JOLIET, ILL.—Zinser Backstrom Co., 604 East Jefferson street, has been incorporated for $20,000 to conduct an autmomobile repair business, by Irvin W. Zinser, Fred R. Adams and Roy Backstrom.

ROCKFORD, ILL.—Maffioli Wilson Co., 107 South Madison street, has been incorporated for $10,000 to manufacture and deal in electrical supplies, appliances, etc., by Paul H. Wilson, Alfred E. Peterson, Grover Wilson and E. C. Maffioli.

SPRINGFIELD, ILL.—The Rivett Lathe & Grinder Corp., Brighton district of Boston, was incorporated here recently for $450,000 to manufacture machinery, with Thorvald S. Ross, as president.

SPRINGFIELD, ILL.—A. L. Ide & Sons, Fifth and Madison streets, was badly damaged by fire June 8, the buildings and equipment of the power plant, pattern rooms and stock rooms being rendered useless. The buildings will not be reconstructed at present, according to Francis P. Ide, a member of the company.

ASHLAND, KY.—Industrial Equipment Co., general delivery, wants air compressor with 3000 to 3400 cubic foot capacity.

CANTON, MD.—Baltimore Copper Smelting & Rolling Co., subsidiary of the American Smelt-

Bourne-Fuller Service

includes immediate shipment of all Iron and Steel materials from Cleveland and Cincinnati

Warehouses

If you are not receiving our Stock-list we shall be glad to send it to you regularly upon request.

Upson Works

Open Hearth Steel Bars for special uses. Also a complete line of Bolts and Nuts. Prompt Shipments.

THE
BOURNE-FULLER CO.
Iron, Steel
Pig Iron
Coke

CLEVELAND

New York **Chicago**
San Francisco
Cincinnati **Detroit**

ing & Refining Co., plans erecting rod and wire mill and various plant extensions. W. H. Peirce is president of the Baltimore company.

BOSTON—The Standard Auto Gear Co. has been incorporated with 100 shares no par value stock, with Morris Roazen, Dorchester, Mass., as president.

BOSTON—The Alemite Lubricator Co. of New England, has been incorporated with $100,000 capital and 1000 shares no par value stock, by Herbert R. Ehrmann, Brookline, and Leopold M. Goulston, and Irene Craig.

CAMBRIDGE, MASS.—The Haskell-Adams Co., Boston, will build a 2-story and basement, 110x190-foot brick and concrete warehouse and office here.

CHARLESTON, MASS.—T. P. Glynn, chairman of the school house department, city hall, Boston, plans constructing wood and metalworking shop addition to Warren-Bunker Hill elementary school.

FITCHBURG, MASS.—The McCarrell Automotive Products Co. has been incorporated for $50,000 and 1500 shares no par value stock, by Edwin R. Smith, Fitchburg, Alton F. Tupper, Alrington, and Burton J. Legate, Newburyport.

HOPEDALE, MASS.—The Draper Corp. is receiving bids for a new boiler house.

WATERTOWN, MASS.—The F. W. Webb Mfg. Co., will build a 1-story, 60x100-foot warehouse here.

BATTLE CREEK, MICH.—Grand Trunk railway, has awarded general contract to Bierd, Lydon & Grandpre, 340 West Harrison street, Chicago, for $600,000 powerhouse, roundhouse, engine terminal and shops. T. T. Irving, 400 East Jefferson street, Detroit, is chief engineer. *Noted May 8.*

DETROIT—The Capitol Brass Co., 2306 Franklin avenue, plans 1-story plant.

DETROIT—Vending Machine Co. of Detroit, has been incorporated with $60,000 capital to manufacture, sell and operate vending machines, by Silas A. Miller, 3049 Grand boulevard, Belle W. Miller and Sid A. Erwin.

DETROIT—The Detroit Gray Iron Foundries Co., 6403 Wight street, is planning construction of a 2-story, 50x80-foot plant addition to its foundry on Iron street. Mildner & Eisen, 924 Hammond building, are architects.

DETROIT—Stiner Piston Ring, Inc., has been incorporated for $50,000 to manufacture and deal in automobile accessories, etc., by Earl Stiner, 4526 First street, Ecorse, Mich., John R. Beadle, Detroit and George J. Sandel, Alma.

DETROIT—The Hupp Motor Car Corp. plans erecting building for block test operations, plant to be 50x150 feet and cost approximately $35,000. A plant for storage of steel parts also is contemplated.

DETROIT—DeCroupet Iron Works, 1359 Monroe avenue, E. M. DePlass, president, has awarded contracts for 1-story, reinforced concrete and steel plant addition. Walter F. Linden is general contractor, and Harry J. Farwell, 35 Ford avenue, Highland Park; is architect.

DETROIT—Michigan Terminal Warehouse, 930 Penobscot building, C. G. Hull, secretary, has awarded general contract to Walbridge & Aldinger, 2356 Penobscot building, for 1 and 3-story brick and reinforced concrete buildings on Monyo road, costing about $1,650,000. Murphy & Burns, 3456 Cass street, are architects and engineers. *Noted April 17.*

GRAND RAPIDS, MICH.—Powell Brass Co. has been incorporated for $50,000 to manufacture and deal in plumbing fixtures, by William P. Powell, 1040 Bates street, southeast, Clara A. Powell, and A. Phoebe Powell-Cowdin.

GRAND RAPIDS, MICH.—Winters, Stryker & Cramton, have been incorporated for $85,200 to manufacture and deal in hardware, by Alexander F. Winters, 1815 Lafayette avenue, S. E., Albert Stryker, Jr., and Basil R. Cramton.

GRAND, RAPIDS, MICH.—Haven-Busch Co. has been incorporated for $62,100 to manufacture and deal in ornamental iron and wire products, by Robert H. Haven, 1731 Madison avenue, southeast, J. Hilton Haven, and George Busch.

GRAND RAPIDS, MICH.—Reliable Smelting & Refining Co. has been incorporated for $100,000 to deal in waste metals and other kindred metals and products, by Morris Zukerman, 436 Bond avenue, Alexander Distler, and Chester C. Woolridge.

MILAN, MICH.—The American Boiler & Foundry Co. has been incorporated with $50,000 and 1000 shares of no par value stock to conduct the business of manufacturing and casting metals, by C. W. Steidle, G. L. Laskey and Jack Wimer.

NORTHVILLE, MICH.—The Bell Furnace & Mfg. Co., has been incorporated for $40,000 to manufacture furnace parts, etc., by Edna L. Parker, Elmer L. Smith and F. S. Harmon. The company has taken over the American Bell & Foundry Co. as noted in the May 1 issue of IRON TRADE REVIEW.

SAGINAW, MICH.—Cen-O-Gas Stove Co. has been incorporated with $250,000 no par value stock and 25,000 shares to manufacture kerosene vapor burners, stoves and other oil burning apparatus, by Thomas H. Baker, 1214 Beach street, Helen E. Baker, Flint and Roma Whitesell.

ALBERT LEA, MINN.—Southern Minnesota Gas & Electric Co., is having Frank D. Chase, Inc., 645 North Michigan boulevard, Chicago, draw plans for 1 and 2-story power plant. L. O. Gordon, 515 South Broadway, is general manager of the Southern Minnesota company.

MINNEAPOLIS, MINN.—Electric Machinery Mfg. Co., 1331 Tylor street, northeast, will construct 2-story, 134x182-foot addition to its plant. It will be in the market for a 4-ton electric crane and a key feeding machine.

WINONA, MINN.—Plans have been finished for 1-story, 56x72-foot, power plant addition for the Wisconsin Minnesota Light & Power Co., 178 Center street. R. M. Howard is manager.

JACKSON, MISS.—Pioneer Wrapping Machine Co. has been incorporated for $50,000 to build machinery for wrapping, with George D. Ratcliff and F. W. Ratcliff, Clinton, and J. T. Brown, as incorporators.

NATCHEZ, MISS.—Southern Railway & Light Co. plans expenditure of approximately $150,000 in improvements.

EMINENCE, MO.—The Shawnee Copper Co. has been incorporated by R. E. Carr and others with $50,000 capital, to mine and manufacture copper and products.

KANSAS CITY, MO.—Adcox Mfg. Co. has been incorporated for $160,000 by L. M. Tartar, Harry M. Bayne, 4051 Warwick building, and Albert H. Adcox, 1113 Tenney, and others, to manufacture oil and gas burners.

KANSAS CITY, MO.—Molly-ets Co. has been incorporated for $25,000 to manufacture automatic food molding and wrapping machines, stoves, etc. by C. M. Conger, 2600 North Twelfth street.

ST. LOUIS—R. M. Mulligan, commissioner of buildings, board of education, 911 Locust street, has taken bids for equipment for manual training department of high schools.

ST. LOUIS—St. Louis School for Feeble Minded, care board of public service, E. R. Kinsey, president, city hall, will take bids shortly for mechanical trades shop, 2-story, 50 x 165 feet, $50,000.

ST. LOUIS—Gordon Material Corp. has been incorporated for $3000 to buy, sell, deal in and manufacture structural iron and steel, building material, etc., by M. V. B. Gordon, Archie P. Gordon, and S. W. Gordon, with Irving L. Spencer, 1001 Pierce building, as attorney.

CAMDEN, N. J.—V. & P. Transmission Co., Fifth and Market streets, has been incorporated for $500,000 to manufacture machinery, tools and metal products.

IRVINGTON, N. J.—Parts and assembly plant will be erected here by the Day-Elder Motors Corp. The proposed structure will be 1 and 2 stories high, 100 x 300 feet.

KEARNY, N. J.—Western Electric Co. just has placed contracts to the Kalman Steel Co. for supplying steel in a plant to be constructed. Henry Steers, Inc., is general contractor.

METUCHEN, N. J.—The Borgfeld Machine Works was recently damaged by fire.

NEWARK, N. J.—Rexsine Co., Inc., has been incorporated with $125,000 capital, to manufacture aluminum signs, by William R. Turner.

WEST NEW YORK, N. J.—Gem Gas Range Co. has been incorporated for $100,000 to manufacture gas ranges and heating devices, by William F. Burke, West Hoboken, N. J.

BINGHAMPTON, N. Y.—Delaware, Lackawanna & Western railroad, has taken bids on the general contract for $1,250,000, 1-story, 105x 400-foot brick and reinforced concrete roundhouse and train yards. Frank Neis, care of the owner at Hoboken, N. J., is architect.

BROOKLYN, N. Y.—United Sanitary Products Co., 65 Fifth avenue, New York, B. Newman, president, is taking bids for 4-story, 100x 100-foot mill constructed building at Buckley street and Foster avenue.

BROOKLYN, N. Y.—Plans are being prepared by Antone Scholl & Son, 380 Flushing avenue, for the erection of a $20,000 plant addition. The company manufactures automobile bodies.

BROOKLYN, N. Y.—Kings Appliance Corp., has been incorporated with 1000 shares no par value common stock to deal in gas and oil and manufacture and sell electrical machines, by R. Elsman, P. Bucher, and A. J. Gennoud, with Whitney & Langstaff, 120 Broadway, as attorneys.

BUFFALO, N. Y.—Borschel Metal Products Corp. has been incorporated for $25,000 by A. R. Moehler, A. F. Borschel and M. E. Buie, with Coatsworth & Diebold, as attorneys.

BUFFALO, N. Y.—The Hugh Co., 190 Elk street, is making additions to its plant. The company manufactures sheet metal work, ventilating, dust and blower systems, metal stampings, etc.

BUFFALO, N. Y.—National Heat Efficiency Corp. has been incorporated for $50,000 to manufacture oil burners, with W. G. Fraser, W. G. Weimert and J. W. Glenn as incorporators. O. C. Joslin is attorney.

BUFFALO, N. Y.—Buffalo Kleen Heat has been incorporated for $20,000 to manufacture plumber's supplies, etc., by E. C. Cochrane, K. C. Ovitt and W. F. Hofheins, with Van Arsdale, Hofheims & Vandermullen, as attorneys.

BUFFALO, N. Y.—McCutcheon-Zimmerman Corp. has been incorporated with 100 shares no par value common stock to build flour mill machinery, by S. J. McCutcheon, F. W. Zimmerman and R. W. Snow, with F. J. Knorr, Albany, as attorney.

GLOVERSVILLE, N. Y.—United States Feldspar Co., 170 Broadway, New York, plans

grinding plant here. C. H. Peddrick Jr., is interested.

GREEN ISLAND, N. Y.—The Ford Motor Co., Detroit, plans building plant addition here to be 1 or 2-story, 200x1300 feet.

GRIEG, N. Y.—Laszle-Tock Co. is in the market for a used toolmaker's lathe, and sheet metal working machinery for the manufacture of brass fire extinguishers. J. Laszle is purchasing agent.

NEW YORK—A. B. A. Garage Corp. has been incorporated for $30,000 to own and operate a public garage, by A. Abramowitz, M. C. Abramchik and S. Birnbaum, with S. Bitterman, 305 Broadway, as attorney.

NEW YORK—Sacks & Rosenblatt, Inc., recently organized, has purchased property on Casanova street, for the erection of an iron works. S. B. Pollak, 63 Park Row, is one of the incorporators.

NEW YORK—Douglass Mfg. Co. has been incorporated with $10,000 capital stock to manufacture and sell vending machines, by W. Douglass, F. Q. Rast and I. Solovey, with H. M. Goodman, 217 Broadway, as attorney.

NEW YORK—R. W. & B. Mfg. Corp., has been chartered with $50,000 capital to manufacture phonograph needles, with C. W. Finney, J. S. Finney, and W. D. Bunnell, 256 Church street, attorney, as incorporators.

NEW YORK—Doring Co. has been incorporated with $100,000 capital to manufacture brakes and mechanical devices, with A. B. Doring, F. W. Duerk and F. L. Otto as incorporators. J. Levy, 256 Broadway, is attorney.

NEW YORK—Steemkleen Corp. has been incorporated with 1000 shares $100 par preferred stock and 1500 shares no par value common, to manufacture washing machines, by P. Katz, W. H. Chorosh and F. Kalb, with W. H. Chorosh, 1451 Broadway, as attorney.

NEW YORK—Meter Control Corp. has been incorporated with $300,000 capital, to manufacture and deal in taxicabs and their accessories, by C. B. Schweitzer, G. C. Nordinger and A. Kimmel, with S. Woronoff, 1133 Broadway, as attorney.

NEW YORK—Limited Metal Sales Corp., has been incorporated for $100,000 to manufacture and deal in metals and metal products, by Z. H. Danziger, L. Binder and C. Loewenthal, with L. B. Boudin, 110 West Fortieth street, as attorney.

NEW YORK—Bradley Process has been incorporated for $100,000 to build machinery for extracting volatiles from coal and shale, with J. Bradley, and A. J. Smith as incorporators. L. E. Warren, 36 West Forty-fourth street, is attorney.

NEW YORK—Multi-Stamping Corp. has been incorporated with 500 shares $100 par preferred stock and 1000 shares no par value common, to manufacture duplicating and stamping devices, by R. C. Dunbar, J. M. Ferris and W. J. Matthews, with F. J. Knorr, Albany, as attorney.

NEW YORK—Advance Boiler Corp. has been incorporated with 2500 shares $100 par first preferred stock, 3000 shares $100 par second preferred and 5000 shares no par value common, by A. Campagna, H. Dunbak and J. Guttman, with Jeffery & Redmond, 14 Wall Street, as attorneys.

NEW YORK—N. C. Failor Co., 30 Church street, desires to purchase 8 to 10-foot squaring shears, automatic screw machines of the Brown & Sharpe Mfg. Co., types, universal milling machine, of the Cincinnati Milling Machine Co., type, 36-inch gear hobbing machine, 3-inch spindle floor type horizontal boring, drilling and milling machine.

PENN YAN, N. Y.—Walker Bin Co., manufacturer of store fixtures, plans 2-story, 72x108x 175-foot plant on Liberty street.

PULASKI, N. Y.—H. F. Billhardt, 23 North street, is in the market for machinery and tools for a machine shop for motor repairs.

QUEENS, L. I., N. Y.—Republic Truck Sales & Service Corp. has been incorporated for $40,000 to sell trucks and automobiles, operate service and repair stations, by N. A. Shepley and P. Davenport, with J. J. Bailey, 32 Liberty street, New York, as attorney.

CHARLOTTE, N. C.—Steel Products Sales Co. has been incorporated by Russell P. Geer, Fred L. Wilson and W. C. Newell.

LENOIR, N. C.—Appalachian Train school, New river, plans construction of a power plant.

SANFORD, N. C.—The Edwards Railway Motor Car Co. has awarded construction contracts for addition to local plant, 80 x 150 feet, 1-story. H. P. Edwards is president of the company.

STATESVILLE, N. C.—J. C. Steele & Sons, manufacturer of brick making and clayworking machinery, wants tool and cutter grinder, small size, used. C. M. Steele is purchasing agent.

AKRON, O.—The Northern Ohio Traction & Light Co. has received permit for constructing $40,000 substation at the Gorge power plant.

ALLIANCE, O.—Alliance Machine Co. will not interrupt its production schedules as a result of a fire in the furnace room of the plant June 6. Little damage was done.

ATHENS, O.—The Ohio university plans constructing manual training and engineering buildings as part of expansion program.

ATHENS, O.—Plans have been completed by H. P. Briggs, Columbus, state architect, for manual training and engineering building for Ohio university. *Noted June 26.*

CINCINNATI, O.—The General Electric Co. plans constructing 5-story warehouse at 215 West Third street, costing about $500,000. Ferro Concrete Construction Co. is general contractor.

New Trade Publications

VACUUM PUMPS—A bulletin of the Chicago Pneumatic Tool Co., New York, devoted to a discussion of vacuum production, gives a full description of the devices manufactured by that company for the exhaustion of air.

BENCH GRINDER—The Hisey-Wolf Machine Co., Cincinnati, has issued a bulletin on a ball bearing bench grinder using either alternating or direct current. The various parts of the machine are described.

INSURANCE—In a book entitled "When Insurance Insures and When It Doesn't," the American Appraisal Co., New York, presents information on the proper methods of estimating the value of industrial property for insurance purposes.

FLEXIBLE SHAFTS—Flexible shaft equipment for grinding, polishing, buffing, scratch brushing, rotary filing, sanding, drilling, reaming, tapping, etc., is described and illustrated in a 32-page booklet recently issued by N. A. Strand & Co., Chicago.

FANS—In two bulletins the American Blower Co., Detroit, describes its disk and multiblade fans in various forms and sizes for a wide range of uses. Data by which to determine the proper type and size are given also.

WELDING AND CUTTING APPARATUS—Oxy-acetylene and oxy-hydrogen welding and cutting apparatus form the subject of an attractive booklet by the Burdett Mfg. Co., Chicago. The subject of welding is treated and the apparatus described, with illustrations of actual use for various purposes.

PYROMETERS—Cold junction compensation is an important element in accurate pyrometer readings and in a bulletin just issued by the Brown Instrument Co., Philadelphia, this is explained as well as the indicating, recording and compensating apparatus made by the company.

TEMPERATURE CONTROL—Automatic control and regulation of temperature with all types of burners and oil and gas fuels is the object of a device illustrated in a folder issued by F. J. Ryan & Co., Philadelphia. It is operated by a solenoid and may be used in conjunction with pyrometric equipment.

FURNACE INSULATION — The Celite Products Co., Chicago, has published a bulletin on insulation of industrial furnaces and ovens, giving information on methods of insulating various types of furnaces and ovens and savings possible to accomplish. Insulation of boilers is also described in another bulletin now available.

POWER PLANT EQUIPMENT—The Swartwout Co., Cleveland, has issued a 56-page booklet giving information on steam traps, steam and oil separators, feed water heaters, cast iron exhaust heads, air separators, sediment traps and strainers and water level control valves. Dimensions of the various parts described are given and sectional sketches of the parts are included.

HEAT TREATMENT—Electric furnaces and pyrometers for accurate control of heat treatment of steel parts are described in a catalog covering the principles and practice of heat treatment, issued by the Leeds & Northrup Co., Philadelphia. The theory of controlling the physical structure of steel by heat treatment and the use of the thermocouple are discussed thoroughly and installations of the company's equipment are shown.

DIES—Standard die sets ready to take off the shelf instead of waiting for the toolroom to manufacture such equipment is a development of machine work relieving shops of much work. The Bilton Machine Tool Co., Bridgeport, Conn., has issued a bulletin describing the various standard die sets ready for shipment when needed. Tables of data applying to the sets add much to a full understanding of what is offered.

AIR FILTERS—Filtering air supplied to compressors and internal combustion engines is the aim of filters manufactured by Midwest Air Filters, Inc., New York, described in a catalogue being sent the trade. A cell acting as a multiple baffle, to which is added the effect of viscous-coated surfaces, removes particles in the air. Construction of the unit, installation and computations to determine the size necessary for various uses are fully treated.

Iron and Steel Scrap Prices

CORRECTED TO TUESDAY NOON GROSS TONS DELIVERED TO CONSUMER

Steel Works Scrap

HEAVY MELTING STEEL

Birmingham	11.00 to 12.00
Boston (dealers)	10.50 to 11.00
Buffalo	14.00 to 15.00
Chicago	14.00 to 14.50
Cleveland	14.00 to 14.25
Cincinnati	11.50 to 12.00
Detroit (dealers)	13.00 to 13.50
Eastern Pennsylvania	15.00 to 16.00
New York (dealers)	11.50 to 12.00
Pittsburgh	16.50 to 17.00
St. Louis	12.75 to 13.25
Valleys	16.00 to 16.75
No. 1 railroad steel New York (dealers)	11.50 to 12.00

COMPRESSED SHEETS

Buffalo	13.50 to 14.00
Chicago	10.50 to 11.00
Cleveland	11.25 to 12.00
Detroit (dealers)	11.00 to 11.50
Pittsburgh	15.00 to 15.50
Valley	14.25 to 14.50

BUNDLED SHEETS

Buffalo	8.50 to 9.00
Cincinnati	9.00 to 9.50
Cleveland	11.50 to 12.00
Detroit	9.00 to 9.50
Eastern Pennsylvania	12.50 to 13.00
Pittsburgh	14.00 to 14.50
St. Louis	8.50 to 9.00
Valleys	12.00 to 12.25

SHEET CLIPPINGS, LOOSE

Chicago	7.50 to 8.00
Detroit	8.00 to 8.50

STEEL RAILS, SHORT

Birmingham	11.00 to 12.00
Detroit	8.00 to 8.50
Chicago	16.50 to 17.00
Cincinnati	15.50 to 16.00
Cleveland (over 6 ft.)	13.00 to 13.50
St. Louis	16.00 to 16.50

STOVE PLATE

Birmingham	14.00 to 15.00
Boston (consumers)	15.00 to 15.50
Buffalo	15.00 to 15.50
Chicago	15.00 to 15.50
Cincinnati (net tons)	8.50 to 9.00
Cleveland	13.25 to 13.50
Detroit (net ton) dealers	12.00 to 12.50
Eastern Pennsylvania	14.50
New York (dealers)	11.50 to 12.00
Pittsburgh	13.50 to 14.00
St. Louis	15.00 to 15.50

LOW PHOSPHORUS

Buffalo	17.50 to 18.00
Cincinnati	13.50 to 14.00
Eastern Pennsylvania	18.50 to 20.00
Pitts. billet and bloom crops	21.50 to 22.00

SHOVELING STEEL

Chicago	13.25 to 13.75
Pittsburgh	13.50 to 14.00
St. Louis	12.75 to 13.25

KNUCKLES, COUPLERS, SPRINGS

Chicago	17.00 to 17.50
Eastern Pennsylvania	18.00 to 19.00
Pittsburgh	19.50 to 20.00
St. Louis	17.00 to 17.50

FROGS, SWITCHES, GUARDS

Chicago	14.00 to 14.50
Eastern Pennsylvania	15.00 to 15.50
St. Louis	13.50 to 14.00

BOILER PLATE, CUT

St. Louis	6.50 to 7.00

ANGLE BARS—STEEL

Chicago	15.25 to 15.75
St. Louis	14.50 to 15.00

Iron Mill Scrap

RAILROAD WROUGHT

Birmingham	11.00 to 12.00
Boston (dealers)	12.50 to 13.00
Buffalo	12.50 to 13.00
Cleveland, No. 1	11.50 to 12.00
Chicago, No. 1	14.00 to 14.50
Chicago, No. 2	14.00 to 14.50
Cincinnati, No. 1	10.50 to 11.00
Detroit, No. 2	13.00 to 13.50
Eastern Pennsylvania	17.50 to 18.00
New York, No. 1 (dealers)	15.00 to 15.50
Pittsburgh, No. 1	13.50 to 14.00
Pittsburgh, No. 2	16.50 to 17.00
St. Louis, No. 1	11.00 to 11.50
St. Louis, No. 2	12.75 to 13.25

WROUGHT PIPE

Boston (dealers)	9.50 to 10.00
Buffalo	11.00 to 12.00
Eastern Pennsylvania	15.00 to 16.00
New York (dealers)	10.75 to 11.25

YARD WROUGHT

Boston	12.00 to 12.50
Eastern Pennsylvania	16.00 to 17.00

CITY WROUGHT

New York, long	13.50 to 14.00

BUSHELING

Buffalo	12.50 to 13.50
Chicago, No. 1	11.50 to 12.00
Chicago, No. 2	8.25 to 8.75
Cincinnati, No. 1	9.00 to 9.50
Cleveland, No. 1	12.50 to 12.75
Cleveland, No. 2	10.00 to 10.50
Detroit, No. 1	11.00 to 11.50
Detroit, No. 1 (new)	10.00 to 10.50
Detroit, No. 2 (old)	9.00 to 9.50
Eastern Pennsylvania	14.00 to 15.00
Pittsburgh, No. 1.	13.50 to 14.00
St. Louis, No. 1	12.50 to 13.00

MACHINE SHOP TURNINGS

Birmingham	6.00 to 7.00
Boston (dealers)	7.00 to 7.50
Buffalo	10.00 to 10.50
Chicago	7.50 to 8.00
Cincinnati	8.50 to 9.00
Cleveland	12.50 to 12.75
Detroit (dealers)	10.00 to 10.50
Eastern Pennsylvania	12.00 to 12.50
New York (dealers)	8.50 to 9.00
Pittsburgh	13.00 to 13.50
St. Louis	6.50 to 7.00
Valleys	11.75 to 12.00

CAST IRON BORINGS

Birmingham (chemical)	15.00 to 16.00
Birmingham (plain)	9.00 to 10.00
Boston (chemical)	8.50 to 9.00
Boston (dealers)	8.00 to 8.50
Buffalo	11.50 to 12.00
Chicago	10.25 to 10.75
Cincinnati	8.50 to 9.00
Cleveland	13.25 to 13.75
Detroit (dealers)	11.00 to 11.50
Eastern Pennsylvania (chem.)	14.00 to 14.50
Eastern Pennsylvania	13.25 to 13.75
New York (dealers)	8.50 to 9.00
Pittsburgh	13.50 to 14.00
St. Louis	9.25 to 9.75
Valleys	13.75 to 14.25

MIXED BORINGS AND TURNINGS
For blast furnace use

Boston (dealers)	6.50 to 7.00
Cleveland	13.25 to 13.50
Detroit (dealers)	11.00 to 11.50
Eastern Pennsylvania	11.00 to 11.50
New York (dealers)	8.00 to 8.50

IRON AXLES

Birmingham	19.00 to 19.50
Boston (consumers)	31.00 to 32.00
Buffalo	25.00
Chicago	26.00 to 26.50
Cincinnati	19.50 to 20.00
St. Louis	25.00 to 25.50
New York (dealers)	23.00 to 24.00
Eastern Pennsylvania	21.50 to 22.50

IRON RAILS

Buffalo	19.00 to 20.00
Chicago	17.50 to 18.00
Cincinnati	11.50 to 12.00
St. Louis	10.50 to 11.00

PIPES AND FLUES

Chicago	9.50 to 10.00
Cincinnati	8.50 to 9.00
Cleveland	10.00 to 10.25
St. Louis	7.50 to 8.00

RAILROAD GRATE BARS

Buffalo	14.50 to 15.00
Chicago	15.00 to 15.50
Cleveland	13.75 to 14.00
Eastern Pennsylvania	14.50
New York (dealers)	12.50 to 13.00
St. Louis	14.00 to 14.50

FORGE FLASHINGS

Boston (dealers)	8.00 to 8.50
Buffalo	12.00 to 12.50
Chicago	9.50 to 10.00
Cleveland (under 10 in.)	11.50 to 12.00
Cleveland (over 10 in.)	9.50 to 10.00
Detroit (dealers)	9.00 to 9.50

FORGE SCRAP

Boston (dealers)	8.00 to 8.50
Chicago	17.00 to 17.50
Eastern Pennsylvania	13.00 to 13.50

ARCH BARS AND TRANSOMS

Chicago	18.50 to 19.00
St. Louis	18.00 to 18.50

ANGLE BARS—IRON

Chicago	17.50 to 18.00
St. Louis	17.00 to 17.50

Iron and Steel Works Scrap

AXLE TURNINGS

Boston (dealers)	8.00 to 8.50
Buffalo	14.50 to 15.00
Chicago	11.50 to 12.00
Cleveland	13.25 to 13.75
Eastern Pennsylvania	14.00 to 14.50
Pittsburgh,	15.50 to 16.00
St. Louis	10.00 to 10.50

STEEL CAR AXLES

Birmingham	17.00 to 18.00
Boston (consumers)	19.00 to 20.00
Buffalo	19.00 to 20.00
Chicago	18.50 to 19.00
Cleveland	17.75 to 18.25
Eastern Pennsylvania	21.00 to 22.00
Pittsburgh	19.50 to 20.00
St. Louis	17.00 to 17.50

SHAFTING

Boston (consumers)	19.00 to 20.00
Chicago	19.50 to 20.00
Eastern Pennsylvania	22.00 to 24.00
New York (dealers)	17.00 to 17.50
St. Louis	19.00 to 19.50

Iron Foundry Scrap

CAR WHEELS

Birmingham, tram car	15.00 to 16.00
Birmingham, iron	15.00 to 15.50
Boston (consumers)	19.00 to 19.50
Buffalo	16.00 to 16.50
Chicago, iron	16.00 to 16.50
Cincinnati	11.00 to 11.50
Eastern Pennsylvania	17.50 to 18.00
New York iron (dealers)	14.50 to 15.00
Pittsburgh, iron	16.50 to 17.00
Pittsburgh, steel	19.50 to 20.00
St. Louis, iron	15.00 to 15.50

NO. 1 CAST SCRAP

Birmingham, cupola	15.00 to 16.00
Boston (consumers)	19.50 to 20.00
Buffalo	16.00 to 16.50
Chicago, No. 1 machinery	18.00 to 18.50
Cincinnati No. 1 machinery cupola (net tons)	16.00 to 16.50
Cleveland, cupola	19.00 to 19.50
Detroit (net tons) (dealers)	16.00 to 16.50
Eastern Pennsylvania, cupola	17.50 to 18.50
New York, cupola (dealers)	14.00 to 14.50
Pittsburgh, cupola	17.50 to 18.00
San Francisco	20.00
St. Louis, railroad	18.50 to 19.00
St. Louis, agricultural	18.50 to 19.00
Valleys	19.50 to 20.00

HEAVY CAST

Boston (consumers)	15.50 to 16.00
Buffalo (breakable)	15.00 to 15.50
Cleveland	12.25 to 12.50
Detroit (automobile) (net ton)	16.50 to 17.00
Eastern Pennsylvania	16.00
New Yorkk (dealers)	12.50 to 13.00
Pittsburgh	15.50 to 16.00

MALLEABLE

Boston (railroad)	18.00 to 18.50
Buffalo	17.00 to 17.50
Chicago, railroad	17.00 to 17.50
Chicago, agricultural	16.00 to 16.50
Cincinnati, agricultural	11.00 to 11.50
Cincinnati, railroad	14.50 to 15.00
Cleveland, agricultural	15.75 to 16.00
Cleveland, railroad	16.75 to 17.00
Detroit (dealers)	16.50 to 17.50
Eastern Pennsylvania, railroad	15.50 to 16.50
Pittsburgh, railroad	15.50 to 16.00
St. Louis, agricultural	13.00 to 13.50
St. Louis, railroad	13.25 to 13.75

Miscellaneous Scrap

RAILS FOR ROLLING
5 feet and over

Birmingham, tram car	14.50 to 15.00
Boston (dealers)	12.00 to 13.00
Chicago	14.75 to 15.25
Cleveland	15.50 to 16.00
Detroit	12.50 to 13.00
Eastern Pennsylvania	17.00 to 17.50
New York (dealers)	14.00 to 14.50
Pittsburgh district	18.00 to 18.50
St. Louis	14.75 to 15.25

LOCOMOTIVE TIRES

Chicago	17.00 to 17.50
St. Louis	14.50 to 15.00

LOW PHOSPHORUS PUNCHINGS

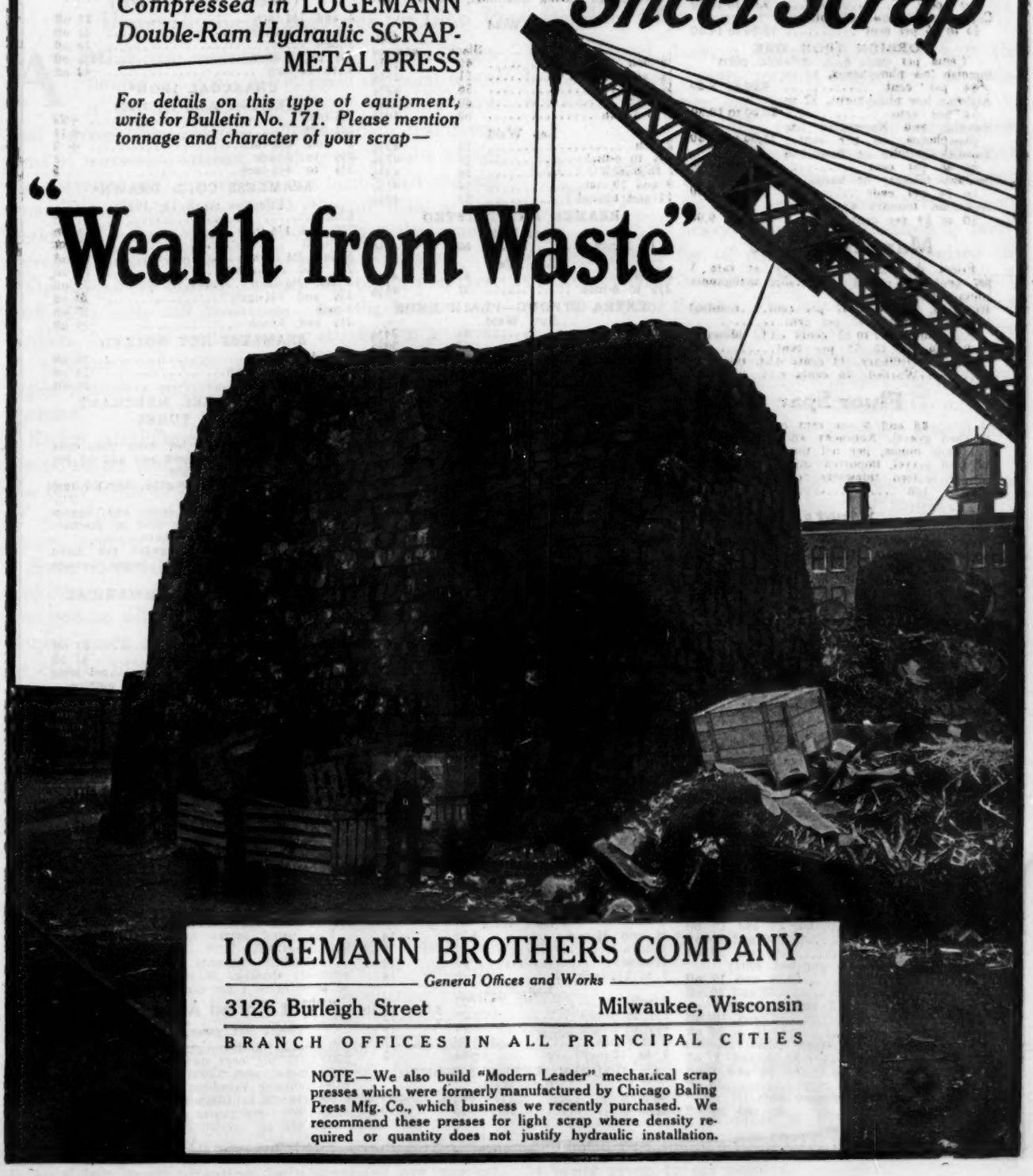
Chicago	15.00 to 15.50
Eastern Pennsylvania	18.00 to 19.00
Pittsburgh	20.00 to 20.50

Almost 2000 Tons - of "LOGEMANN HYDRAULIC-COMPRESSED" Sheet Scrap

Compressed in LOGEMANN *Double-Ram Hydraulic* SCRAP-METAL PRESS

For details on this type of equipment, write for Bulletin No. 171. Please mention tonnage and character of your scrap—

"Wealth from Waste"



LOGEMANN BROTHERS COMPANY

General Offices and Works

3126 Burleigh Street Milwaukee, Wisconsin

BRANCH OFFICES IN ALL PRINCIPAL CITIES

NOTE—We also build "Modern Leader" mechanical scrap presses which were formerly manufactured by Chicago Baling Press Mfg. Co., which business we recently purchased. We recommend these presses for light scrap where density required or quantity does not justify hydraulic installation.

Iron and Steel Prices

Iron Ore

LAKE SUPERIOR ORES

Per Gross Ton Lower Lake Ports

Old range bessemer, 55 per cent iron. $5.65
Mesabi bessemer, 55 per cent iron.... 5.40
Old Range nonbessemer, 51½ per cent iron 4.90
Mesabi nonbessemer, 51½ per cent iron 4.75

EASTERN LOCAL ORES

Cents per unit delivered at Eastern Pennsylvania and New Jersey furnaces

Foundry and basic 53 to 63 per cent ..... 9.00 to 10.50
Copper free low phosphorus 53 to 65 per cent ..... 12.50 to 14.50

FOREIGN IRON ORE

Cents per unit, c.i.f. Atlantic ports

Spanish low phosphorus, 52 to 54 per cent ..... 9.00 to 9.50
Algerian low phosphorus, 52 to 54 per cent ..... 10.00 to 10.50
Swedish and Norwegian low phosphorus, 68 per cent.. 11.00 to 11.50
Swedish foundry or basic, 66 to 68 per cent ..... 9.00 to 10.00
Spanish foundry or basic, 50 to 54 per cent ..... 8.00 to 9.00
Alegerian foundry and basic, 50 to 54 per cent ..... 8.00 to 9.00

Manganese Ore

Prices do not include duty at rate 1 per cent per pound of metallic manganese contained.

Brazilian, minimum 47 per cent....nominal
Indian, minimum 47 per cent.....
....nominal 41 to 42 cents c.i.f. tidewater
Caucasian, 53 to 55 per cent.....
.....Ordinary, 43 cents c.i.f. tidewater
.....Washed, 46 cents c.i.f. tidewater

Fluor Spar

85 and 5 per cent grade

Washed gravel, Kentucky and Illinois mines, per net ton $19.00 to 23.50
Washed gravel, imported duty paid eastern tidewater, per gross ton ..... 20.60 to 21.10

Rivets

Structural rivets, C. L. Pitts.. 2.50c to 2.65c
structural rivets L. C. L. Pittsburgh ..... 2.65c to 2.75c
Rivets, 7/16-in. and smaller.....
.....70 and 10 off to 70, 10 and 10 off

Nuts and Bolts

(Up to 1¾ and 1½ inches inclusive)

Hot pressed square or hexagon blank .....$5.00 to 4.75 off list
Hot pressed square or hexagon tapped .....$5.00 to 4.75 off list
Cold punched square or hexagon blank .....$4.50 to 4.25 off list
Cold punched square or hexagon.... .....$4.50 to 4.25 off list
Cold punched semifinished hexagon nuts ⅝-inch and larger .....80 and 10 off
Cold punched semifinished hexagon nuts 9/16-inch and smaller ....80, 10 and 5 off
Price f.o.b. Pittsburgh, packages of 50.

CARRIAGE BOLTS

(¾ x 6 inches, smaller and shorter)

Rolled thread .....60 and 20 off
Cut thread .....60 and 10 off
Larger and longer .....60 and 10 off

MACHINE BOLTS

(⅜ x 4 inches, hot pressed nuts)

Rolled thread .....60, 20 and 10 off
Cut thread .....60 and 20 off
Larger and longer .....60 and 20 off

(All sizes cold punched nuts)

Cut thread .....50,10 and 10 off
Lag screws .....65 and 20 off
Plow bolts Nos. 1, 2 and 3 heads.. .....50 and 10 off
4 to 10 heads.....50-10 + 20 off
Flat and round head stove bolts..... .....80,10 and 5 off
Other stove bolts .....80, 10 and 5 off
Tap bolts .....30 off
Bolt ends with hot pressed nuts..... .....60 and 20 off
Bolt ends with cold punched nuts.... .....50, 10 and 10 off
Blank bolts .....60 and 20 off
Rough stud bolts with nuts (250 pieces or more of a size)..... ....45, 10 and 5 off

Washers

Wrought .....$5.50 to $6.00 off
Lock washers .....80 per cent off

Steel Pipe

(Effective April 19, 1923)

Pittsburgh basing discounts, jobbers' carloads.

	Black	Galvanized
Butt Weld		
⅛-inch	45	19½
¼ and ⅜-inch	51	25½
½-inch	56	42½
¾-inch	60	48½
1 to 3-inch	62	50½
Lap Weld		
2-inch	55	43½
2½ to 6-inch	59	47½
7 to 8-inch	56	43½
9 and 10-inch	54	41½
11 and 12-inch	53	40½
REAMED AND DRIFTED		
Butt Weld		
1 to 3-inch	60	48½
Lap Weld		
2-inch	53	41½
2½ to 6-inch	57	45½
EXTRA STRONG—PLAIN ENDS		
Butt Weld		
⅛-inch	41	24½
¼ and ⅜-inch	47	30½
½-inch	53	42½
¾-inch	58	47½
1 to 1½-inch	60	49½
2 to 3-inch	61	50½
Lap Weld		
2-inch	53	42½
2½ to 4-inch	57	46½
4½ to 6-inch	56	45½
7 to 8-inch	52	39½
9 and 10-inch	45	32½
11 and 12-inch	43	31½
DOUBLE EXTRA STRONG		
Butt Weld		
½-inch	42	32½
¾ to 1½-inch	45	35½
2 to 2½-inch	47	37½
Lap Weld		
2-inch	41	32½
2½ to 4-inch	43	34½
4½ to 6-inch	42	33½
7 to 8-inch	38	25½

Wrought Iron Pipe

(Effective Jan. 23, 1923)

Pittsburgh basing discounts, jobbers' carloads

THREADS AND COUPLINGS		
Butt Weld		
¼ and ⅜-inch	+11	+39
½-inch	22	2
¾-inch	28	11
1 to 1½-inch	30	13
Lap Weld		
1¼ and 1½-inch	Upon application	
2-inch	23	7
2½ to 6-inch	26	11
3 to 6-inch	28	13
7 to 12-inch	26	11
PLUGGED AND REAMED		
Two points less than above		
EXTRA STRONG, PLAIN ENDS		
Butt Weld		
¼ and ⅜-inch	+19	+54
½-inch	21	7
¾-inch	28	12
1 to 1½-inch	30	14
Lap Weld		
2-inch	23	9
2½ to 4-inch	29	15
4½ to 6-inch	28	14
7 to 8-inch	21	7
9 to 12-inch	16	2
DOUBLE EXTRA STRONG		
Butt Weld		
½-inch	+47½	+59¾
¾-inch	+28	+40
1-inch	+34	+46
1¼-inch	+28	+40
1½-inch	+27	+39
Lap Weld		
2 and 2½ inches	+13	+25
3 to 4-inch	+ 8	+17
4½ to 6-inch	+ 9	+18
8-inch	+12	

Boiler Tubes

L. C. L. discounts. C. L. 4 points larger

STEEL (Lap Welded)*

(Effective April 19, 1923)

2 and 2¼-inch ..... 23 off
2½ and 2¾-inch ..... 33 off
3-inch ..... 36 off
3¼ to 3¾-inch .....38½ off
4 to 13-inch ..... 42 off

CHARCOAL IRON*

(Effective April 12, 1923)

1½-inch ..... +22
1¾-inch ..... +12
2 and 2¼-inch..... + 2
2½ to 3-inch 3
3¼ to 4½-inch..... 5

SEAMLESS COLD DRAWN*

(Effective April 19, 1923)

1-inch ..... 51 off
1¼ and 1½-inch ..... 43 off
1¾-inch ..... 27 off
2 and 2¼-inch ..... 18 off
2½ and 2¾-inch..... 28 off
3 and 3¼-inch ..... 32 off
3½ and 3¾-inch ..... 33 off
4-inch ..... 37 off
4½ and 5-inch..... 29 off

SEAMLESS HOT ROLLED

3 and 3¼-inch ..... 34 off
3½ and 3¾-inch..... 35 off
4-inch ..... 39 off

SEAMLESS STEEL MERCHANT BOILER TUBES

Extras:

Add $8 per net ton for more than four gages heavier than standard and add 10 per cent to theoretical weight.

Add 5 per cent for lengths over 24 feet and not over 26 feet.

Smaller tubes than 1-inch and lighter than standard gage to be sold at mechanical tubing list and discount.

Intermediate sizes and gages not listed above take price of next larger outside diameter and heavier gage.

SEAMLESS STEEL MECHANICAL TUBING*

Base Discounts

Carbon, 0.10 to 0.20 per cent..... 83 off
Carbon, 0.30 to 0.40 per cent..... 81 off
Carbon 0.40 to 0.50 per cent.....net price
Plus differentials and extras for cutting.

SEAMLESS STEEL LOCOMOTIVE AND SUPERHEATER TUBES*

(Effective April 19, 1923)

Outside diameter	Gage	Net prices per foot f.o.b. Pittsburgh Price
2-inch	12-gage	15c
2-inch	12-gage	15c
2-inch	11-gage	16c
2-inch	10-gage	17c
2¼-inch	12-gage	17c
2¼-inch	11 gage	18c
2¼-inch	10-gage	20c
3-inch	7-gage	38c
1½-inch	9-gage	15c
5⅜-inch	9-gage	55c
5½-inch	9-gage	57c

Plus usual extras for forming and for long lengths.

*Published discounts are subject to considerable shading, in some cases as much as three extra 5 per cents.

Hot Rolled Alloy Steels

Prices per pound, Pittsburgh

S. A. E. Series—

2300 (3½ per cent nickel)... 5.00c
3100 (nickel chromium)..... 4.00c
6100 (chrome vanadium) 4.75c
6100 (chrome vanadium spring) 4.50c
9250 (Silico manganese spring) 4.00c to 4.25c